Five-Year Review Report

Third Five-Year Review Report
for
Pioneer Sand Co.
EPA ID FLD056116965

Warrington
Escambia County, Florida

December 10, 2009

Prepared By:
United States Environmental Protection Agency
Region 4
Atlanta, Georgia

For:
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Approved by:

Franklin E. Hill
Director, Superfund Division

Date:

12-10-09

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List of Acronyms

ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CIC	Community Involvement Coordinator
COC	Contaminant of Concern
CSES	Clean Sites Environmental Services, Inc.
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
FDEP	Florida Department of Environmental Protection
FDER	Florida Department of Environmental Regulation
FS	Feasibility Study
FYR	Five-Year Review
ICs	institutional controls
LNAPL	Light Non-Aqueous Phase Liquid
MCL	Maximum Contaminant Level
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MTBE	methyl tertiary-butyl ether
MW	monitoring well
NCP	National Contingency Plan
ND	non-detect
NPL	National Priorities List
NRDA	Natural Resources Damage Assessment
O&M	Operation and Maintenance
OU	Operable Unit
PCB	polychlorinated biphenyl
PRP	Potentially Responsible Party
QA/QC	Quality Assurance/Quality Control
RA	Remedial Action
RAO	Remedial Action Objective
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
µg/L	micrograms per liter

Executive Summary

The Pioneer Sand Co. site (Site) is located in Warrington, Florida, and covers approximately 11 acres. The Site includes an inactive quarry that received shredded auto parts, construction debris, and industrial sludge from 1973 to 1979. In 1981, the Florida Department of Environmental Regulation (FDER) restricted dumping at the Site. Polychlorinated biphenyls (PCBs), metals, and volatile organic compounds were later detected in soil, ground water, and an on-site sludge pond. Sampling of nearby private wells indicated no off-site ground water contamination. The Site was listed on the National Priorities List (NPL) in 1983.

The Site's 1986 Record of Decision (ROD) selected a remedy to address on-site soil, sludge, and ground water contamination. Cleanup actions included the stabilization of approximately 7,547 cubic yards of sludge, installation of a four-acre synthetic cover system, construction and operation of a leachate collection system, and installation of a gas venting and collection system. Ground water monitoring is ongoing. Cleanup activities were completed in early 1991, and the Site was deleted from the NPL on February 8, 1993.

The triggering action for this third Five-Year Review (FYR) was the signing of the previous FYR on December 13, 2004.

The Remedial Action Objectives (RAOs) in the 1986 ROD include:

- maintain or improve the surface and ground water quality on Site;
- maintain the natural ground water quality adjacent to the Site;
- minimize leachate generation within the fill material;
- minimize human contact with sludges and small pond waters; and
- establish a ground water monitoring program.

Based on a review of ground water monitoring data, the site inspection, and interviews, the Site's remedial components are functioning as intended by the ROD. The Site's remedy is protective of human health and the environment because the contaminants are contained and no observed pathways of exposure were identified in this FYR. Since the implementation of low-flow sampling in October 2004, the detection rate of both cadmium and chromium has decreased. The occasional detection of metal and organic contaminants in the Site's shallow and deep wells suggests that the landfill may still be a source of potential ground water contamination and that continued ground water monitoring is needed. Light non-aqueous phase liquid (LNAPL) has not been detected in the Site's leachate collection system and gas material is not being generated.

The remedy currently protects human health and the environment in the short-term because the exposure pathways that may result in unacceptable risks through exposure to, or ingestion of contaminated ground water are being controlled by the remedy. However, in order for the remedy to be protective in the long-term, ongoing ground water sampling will be performed to ensure long-term protectiveness.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name ***(from WasteLAN)*****:** Pioneer Sand Co.		
EPA ID ***(from WasteLAN)*****:** FLD056116965		
Region: 4	**State:** FL	**City/County:** Warrington/Escambia County
SITE STATUS		
NPL status: ☐ Final ☒ Deleted ☐ Other (specify)		
Remediation status (choose all that apply): ☐ Under Construction ☐ Operating ☒ Complete		
Multiple OUs?* ☐ YES ☒ NO	**Construction completion date:** 12/31/1991	
Has site been put into reuse? ☐ YES ☒ NO		
REVIEW STATUS		
Lead agency: ☒ EPA ☐ State ☐ Tribe ☐ Other Federal Agency		
Author name: Amanda Goyne and Ryan Burdge (reviewed by EPA)		
Author title: Senior Associate and Associate	**Author affiliation: E^2 Inc.**	
Review period****:** 02/12/2009 to 10/31/2009		
Date(s) of site inspection: 04/28/2009		
Type of review: ☐ Post-SARA ☒ Pre-SARA ☐ NPL-Removal only ☐ Non-NPL Remedial Action Site ☐ NPL State/Tribe-lead ☐ Regional Discretion		
Review number: ☐ 1 (first) ☐ 2 (second) ☒ 3 (third) ☐ Other (specify)		
Triggering action: ☐ Actual RA Onsite Construction at OU# ☐ Actual RA Start at OU# ☐ Construction Completion ☒ Previous Five-Year Review Report ☐ Other (specify)		
Triggering action date ***(from WasteLAN)*****:** 12/13/2004		
Due date ***(five years after triggering action date)*****:** 12/13/2009		

* ["OU" refers to operable unit.]

** [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

Five-Year Review Summary Form (continued)

Issues:

1. Trespassing and cutting of the site fence is an ongoing problem.
2. Chromium was detected below MCLs in the 2004 sampling of off-site deep wells. There has been no deep well sampling since 2004.
3. Chlorobenzene was selected as an indicator parameter in the O&M Plan but has not been sampled in ground water wells.
4. Specific Institutional Controls (ICs) were not documented in the ROD. A conservation easement and ground water delineation area have since been put in place to protect the integrity of the remedy and to prevent exposure to contaminated materials. Groundwater clean up levels were stated in the 1990 O&M Plan, but they were not documented in the ROD.

Recommendations:

1. Continue semi-annual inspection of fence integrity and post signage suggesting people refrain from fishing.
2. Develop a plan for and conduct additional sampling of deep wells to evaluate potential migration of contamination into the deep aquifer.
3. Chlorobenzene should be included in all future ground water sampling.
4. Develop an ESD to clarify the groundwater clean up goals and the need for ICs.

Protectiveness Statement:

The remedy currently protects human health and the environment in the short-term because the exposure pathways that may result in unacceptable risks through exposure to, or ingestion of contaminated ground water are being controlled by the remedy. However, in order for the remedy to be protective in the long-term, ongoing ground water sampling will be performed to ensure long-term protectiveness.

Other Comments:

None.

Third Five-Year Review Report
for
Pioneer Sand Co. Superfund Site

1.0 Introduction

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy will continue to be protective of human health and the environment. The methods, findings, and conclusions of FYRs are documented in five-year review reports. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) prepares FYRs pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121 and the National Contingency Plan (NCP). CERCLA Section 121 states:

> *"If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews."*

EPA interpreted this requirement further in the NCP; 40 Code of Federal Regulations (CFR) Section 300.430(f)(4)(ii), which states:

> *"If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such actions no less often than every five years after the initiation of the selected remedial action."*

E^2 Inc., an EPA Region 4 contractor, conducted the FYR and prepared this report regarding the remedy implemented at the Pioneer Sand Co. site (Site) in Warrington, Escambia County, Florida. This FYR was conducted from February to October 2009. EPA is the lead agency for developing and implementing the remedy for the Potentially Responsible Party (PRP)-led cleanup at the Site. The Florida Department of Environmental Protection (FDEP), formerly the Florida Department of Environmental Regulation (FDER), as the support agency representing the State of Florida, has reviewed all supporting documentation and provided input to EPA during the FYR process.

This is the third FYR for the Site. The triggering action for this policy review is the previous FYR, which was signed on December 13, 2004. The FYR is required due to the fact that

hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure. The review is considered policy because the Record of Decision was signed before the effective date of the Superfund Amendments and Reauthorization Act.

2.0 Site Chronology

The following table lists the dates of important events for the Site.

Table 1: Chronology of Site Events

Event	Date
Discovery	November 1, 1979
Preliminary Assessment	February 1, 1980
Site Inspection	March 1, 1980
Proposal to the NPL	December 30, 1982
Final listing on the NPL	September 8, 1983
Remedial Investigation (RI) completed	June 1985
Feasibility Study completed	December 1985
Removal Action completed	August 6, 1986
ROD signature	September 26, 1986
Consent Decree	July 8, 1988
Remedial Design start	July 1988
Remedial Design completed	May 1990
Remedial Action (RA) Plan	June 1990
O&M Plan	August 1990
Actual RA start	March 3, 1990
Construction start	May 17, 1990
Construction completion	March 28, 1991
Final Close-out Report	December 1991
Deletion from NPL	February 8, 1993
First FYR completed	December 22, 1999
Shallow well ground water sampling	April 2004
Shallow and deep well ground water sampling	October 2004
Second FYR completed	December 13, 2004
O&M Plan Addendum	April 11, 2005
April 2005 Semi-Annual Report	April 2005
October 2005 Semi-Annual Report	October 2005
April 2006 Semi-Annual Report	April 2006
October 2006 Semi-Annual Report	October 2006
April 2007 Semi-Annual Report	April 2007
October 2007 Semi-Annual Report	October 2007
April 2008 Semi-Annual Report	April 2008
October 2008 Semi-Annual Report	October 2008
April 2009 Semi-Annual Report	April 2009

3.0 Background

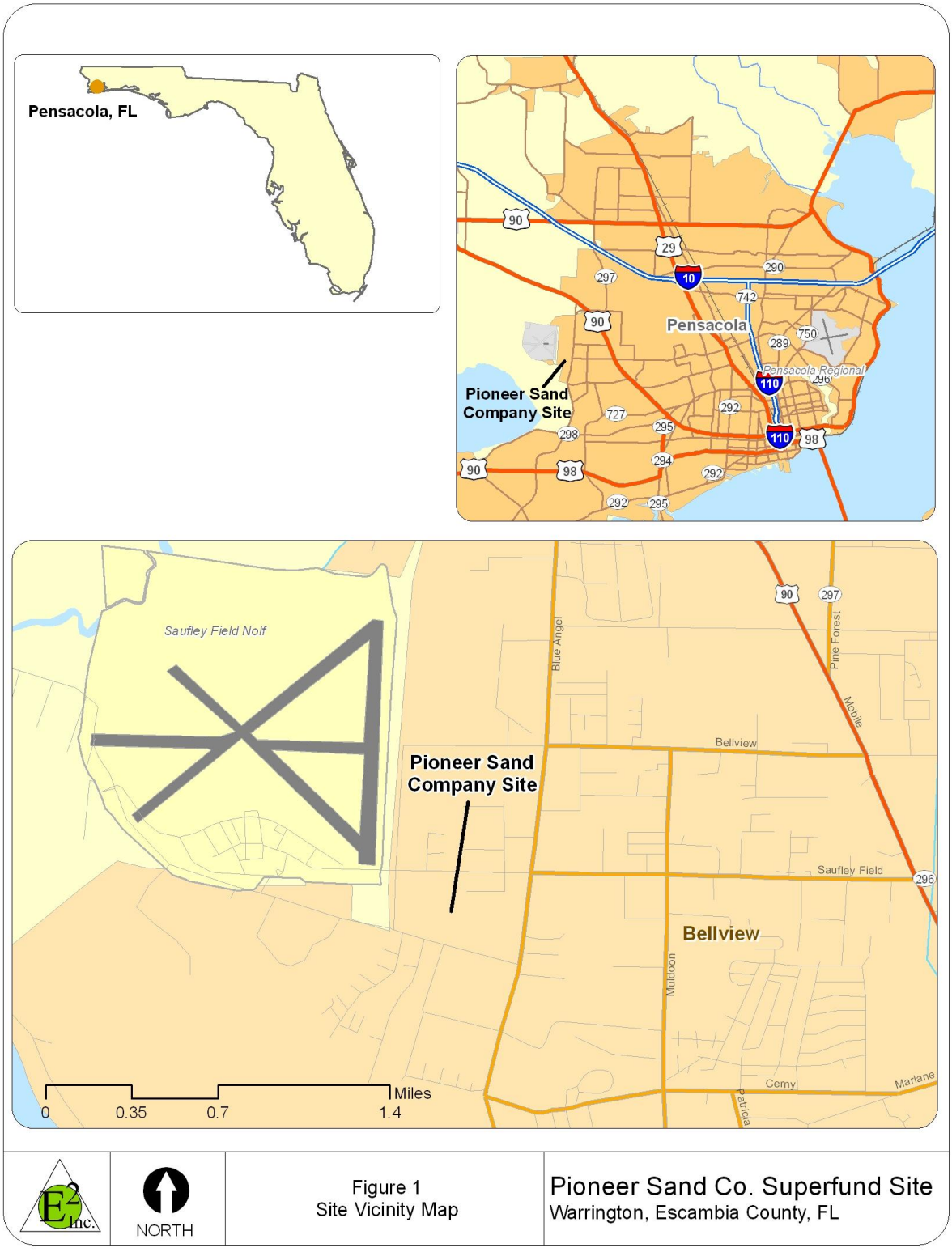
3.1 Physical Characteristics

The Site is located in Warrington, Florida and covers approximately 11 acres. Figure 1 shows the location of the Site. The Site is located approximately 600 feet south of Saufley Field Road, near the intersection of Saufley Field Road and Parliament Drive, and is accessed at the northwest corner by a private driveway. The Site is bordered by private residences to the north, east, and south. The Site is currently zoned as Waste Land and is surrounded by residential parcels. The Escambia County parcel ID for the Site is 022S313000001008.

The Site is surrounded by a chain-link fence (outer fence) with a single entry gate. A four-acre, multi-media cover system occupies the northwestern portion of the Site. The system is surrounded by a chain-link fence (inner fence). Grass or grass-like vegetation covers the cap area. The cap was designed to prevent rainfall from contacting stabilized soils. A gas venting system runs along the western and northern perimeter of the Site. A large pond is located in the southeast section of the Site. Figure 2 shows a detailed site map.

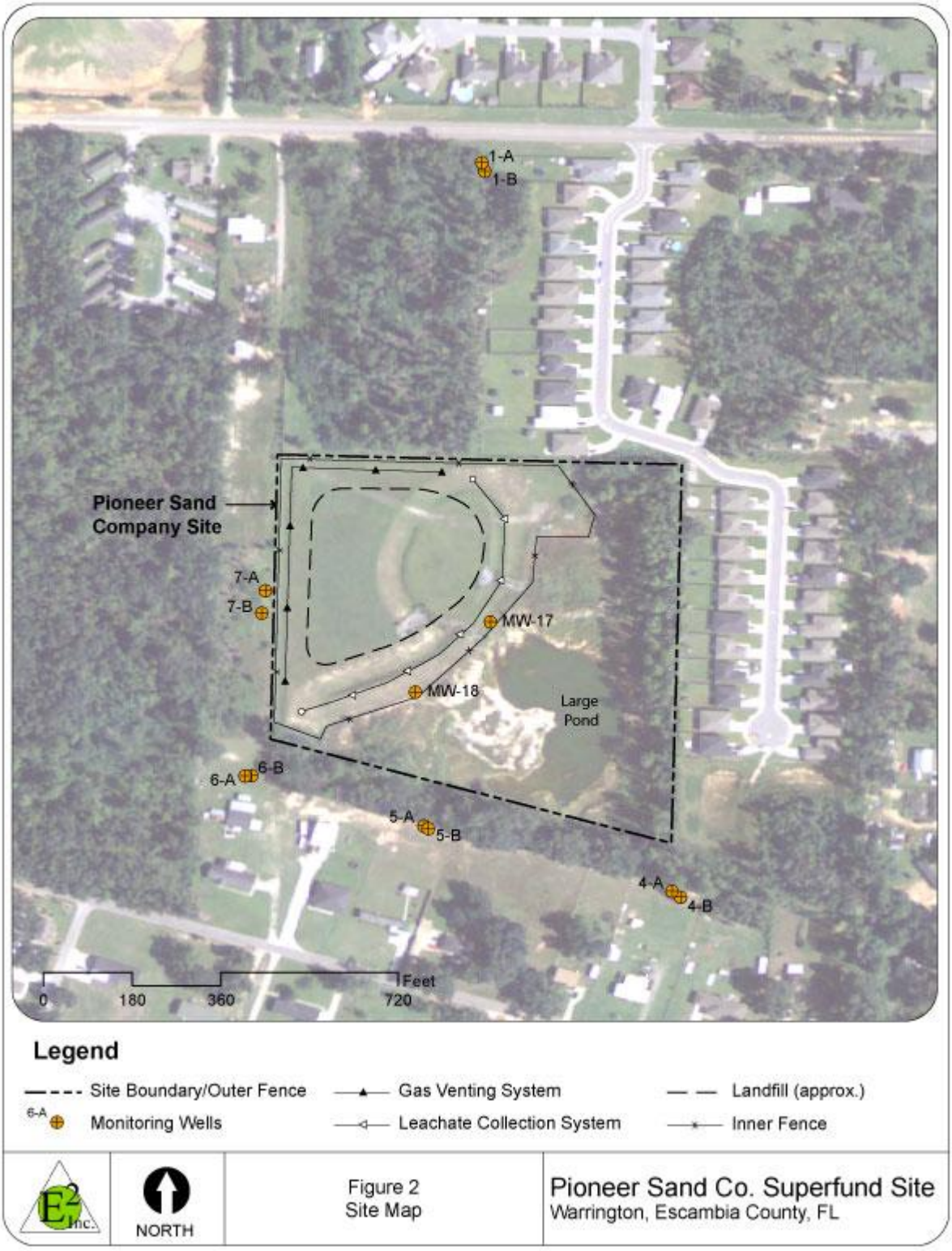
The Site is underlain by a water table aquifer that ranges from 20 to 50 feet in depth, and a deeper sand-and-gravel aquifer that ranges from 80 to 250 feet in depth. The sand-and-gravel aquifer provides the only potable ground water available in the area. The Site's 1985 Remedial Investigation indicated that no private wells were contaminated. In the shallow sand-and-gravel aquifer, the ground water flows to the south at about one to two feet per day. The ground water in the deeper aquifer flows toward the west at less than one foot per day. A uniform, semi-confining, clay layer that is about 30 feet thick is found between these two aquifers. Water levels recorded at the Site in the shallow aquifer show that the ground water fluctuates up to 10 feet and may be hydraulically connected with the large surface pond located at the Site.

Figure 1: Site Location Map



Disclaimer: This map and any boundary lines within the map are approximate and subject to change. The map does not purport to be a survey. The map is for informational purposes only regarding EPA's response actions at the Site, and is not intended for any other purpose.

Figure 2: Detailed Site Map



Disclaimer: This map and any boundary lines within the map are approximate and subject to change. The map does not purport to be a survey. The map is for informational purposes only regarding EPA's response actions at the Site, and is not intended for any other purpose.

3.2 Land and Resource Use

The Site is an inactive quarry that received shredded auto parts, construction debris, and industrial sludge and resins from 1973 to 1979. The Site consists of a covered landfill area containing contaminated media. The installation of new wells is restricted within the FDEP ground water delineation area. According to the Site's 1986 ROD, water for surrounding residential areas was supplied by a municipal system from a deep well located approximately one mile southeast of the Site. This municipal well is still in use today and remains the nearest public water supply well to the Site.

When the ROD was signed in 1986, the Site and its surroundings had not yet been zoned. Escambia County was required to zone all parcels of land by 1987, and the ROD recommended the Site be zoned for industrial use. The Site is currently zoned as Waste Land and the land adjacent to Site is currently zoned for residential use, and includes a newly built subdivision of 44 homes, currently supplied by municipal water.

3.3 History of Contamination

From the 1950s until 1978, the Site was used as a borrow area for supplying sand for construction purposes. A Class III disposal permit issued in 1974 allowed for the disposal of inert materials, including construction debris and automobile parts. Reportedly during this period, various types of phenols and resin compounds from Newport Industries (currently Reichhold Chemical Company) were deposited at the Site. Domestic and industrial wastes, including metal plating sludge, were also received from Pensacola Naval Air Station.

In 1981, FDEP did not renew the disposal permit and ordered the dumping of waste at the Site to cease. By the time of the non-renewal of the disposal permit, approximately one-fourth of the 11-acre pit had been backfilled to the original land surface.

In late 1981, a preliminary contamination survey was conducted to evaluate the extent of contamination at the Site. Elevated levels of various metals and volatile organics were found in the fill material at the Site. Samples from 15 private wells in the area did not find any contamination above background levels.

3.4 Initial Response

The Remedial Investigation (RI) was conducted in late 1984 and 1985 to assess the type of contamination present, the lateral and vertical extent of contamination, the rate of movement of the contaminants, contaminant pathways away from the source (fill material), and the potential impact of the contamination on local residents.

Findings during the RI prompted EPA to conduct a removal action to address all areas with PCB concentrations greater than 50 mg/kg on August 6, 1986.

3.5 Basis for Taking Action

The focus of the 1985 RI was to assess the types of contaminants present at the Site, the lateral and vertical extent of the contaminants, the rate of movement of the contaminants, contaminant pathways away from the source (fill material), and the potential impact of the contamination on local residents. The following general findings were documented in the RI:

1) Within the fill material, a wide variety of priority pollutant volatile and semi-volatile organic compounds and various priority pollutant metal concentrations were found in the soil and ground water samples ranging from near surface and at shallow depths within the fill.
2) The Site is underlain by a water table aquifer, which ranges from 20 to 50 feet in depth, and a deeper sand aquifer from 80 to 250 feet in depth. In the shallow sand-and-gravel aquifer, the ground water flows to the south at about one to two feet per day. The ground water in the deeper aquifer flows toward the west at less than one foot per day. A uniform, semi-confining, clay layer that is about 30 feet thick is found between these two aquifers.
3) One well installed through the fill material and completed beneath the fill in the semi-confining bed had concentrations of metals and organics well in excess of drinking water standards. A sample of leachate seeping from the fill material and migrating into the sludge pond had lead concentrations that exceeded the primary drinking water standards, concentrations of cadmium approaching the primary drinking water standards, and phenol, ethylbenzene, and toluene in concentrations exceeding 100 µg/L.
4) None of the monitoring wells around the perimeter of the Site had any indication of contamination attributed to the disposal activities of the Site.
5) Fifteen nearby private wells were screened for volatile organics, and seven were selected for complete priority pollutant analysis. No contamination was found in any of the wells. Additional protection is provided in that almost all the residents in the vicinity of the Site are on public water supply that pulls water from a deep well located approximately one mile southeast of the Site.
6) Extraction Procedure Toxicity analysis of the fill material samples revealed the presence of cadmium and lead. In one sample, the cadmium had a concentration of 0.63 mg/L, and lead had a concentration of 4.11 mg/L. These values approached, but did not exceed, concentrations that would have designated the fill material a hazardous waste (1.0 mg/L for cadmium, 5.0 mg/L for lead).

The RI concluded that the contaminants deposited at the Site from 1973 to 1979 had not migrated off site. The 1985 RI report described the following factors that reduce the likelihood of off-site contaminant migration:

- clay spoils covering the contaminants, which greatly limit the amount of flushing of chemicals into the ground water;

- relative low permeability of the fill material, which acts as a deterrent to lateral ground water flow (i.e., there is evidence that ground water inflow towards the Site is deflected around the fill material rather than migrating through the Site);
- lack of surface drainage features away for the Site (i.e., lack of chemical transport via streams away from the Site); and
- high volatility of the more mobile organic compounds tends to lead to "volatilization" in extremely short distances.

The Site's 1986 Feasibility Study (FS) was conducted from September to December 1985. The FS determined that the water in the large pond was not contaminated.

An initial inventory of private wells within a one-mile radius of the Site was performed to determine the number of wells and their usage and to sample for contamination. Eighty-eight private wells were located. The 1986 ROD stated that, to the best of EPA's knowledge, all residences adjacent to the Site relied on a municipal water supply for potable water, except for two residences up-gradient from the Site and one residence approximately 1,000 feet southeast of the Site. Because the surrounding residences had access to the municipal water supply, the ROD stated that it was considered unlikely that local residents would be exposed to contaminated ground water in the future. Therefore, a risk assessment was not conducted as part of the RI. The 1985 Natural Resource Damage Assessment (NRDA) conducted by the Fish and Wildlife Service concluded there had been no impacts to Trust resources, including endangered or threatened species.

4.0 Remedial Actions

4.1 Remedy Selection

The Site consists of only one operable unit. The ROD was signed on September 26, 1986, and addressed on-site soil, sludge material, surface water, and ground water contamination. The ROD identified the following as the Remedial Action Objectives:

- maintain or improve the surface and ground water quality on-site;
- maintain the natural ground water quality adjacent to the Site;
- minimize leachate generation within the fill material by limiting ground water percolation through the fill material;
- minimize human contact with the sludges and small pond waters; and
- protect future surface and ground water quality by establishing a monitoring program to detect changes in surface water quality on-site and ground water quality both on-site and off-site.

The major components of the remedy selected in the 1986 ROD are listed below:

- pumping the sludge pond water to a settling/filtration basin prior to discharging the clean effluent to the large pond on-site;
- installing a leachate collection system and limestone bed/aeration treatment unit with discharge to the pond;
- placing a natural cap on the fill and sludge pond areas; and
- implementing a ground water monitoring and sampling program to operate during the remedial design and construction phase and post closure.

4.2 Remedy Implementation

In July 1988, EPA entered into a Consent Decree with Reichhold Chemicals, Inc. The PRP prepared the Remedial Design during 1988 through 1990. Remedial action activities were conducted in accordance with the Site's ROD and associated remedial design and remedial action plans. The PRP contracted with Clean Sites Environmental Services (CSES) to perform construction management, contract administration, and field and laboratory testing. The Remedial Action (RA) construction began on May 17, 1990 and was completed on March 28, 1991. RAs included:

- excavation and stabilization of 7,547 cubic yards of sludge material and soil;
- consolidation of stabilized sludge and soil into one sludge pond;
- construction of a synthetic cap over the fill area and sludge pond;
- construction of a gas venting system;
- treatment of surface water from sludge pond and on-site discharge of clean effluent into large pond;
- implementation and maintenance of security fencing; and
- maintenance of monitoring wells, landfill cover, leachate collection system, gas venting system.

Ground water monitoring of the shallow wells began with the completion of remedy construction. During the initial pre-design, ground water sampling indicated that cadmium and chromium were the best indicators of metal contamination and five volatile organics were selected as indicator parameters: benzene, toluene, chlorobenzene, ethylbenzene, and xylenes. Samples were taken quarterly following completion of construction and semi-annually during O&M.

4.3 Operation and Maintenance (O&M)

The PRP contracted with CSES to perform site O&M. The August 1990 O&M Plan incorporated all EPA and State quality assurance and quality control procedures and protocols that were in place at the time it was written.

Major O&M requirements for the Site are listed below:

- semi-annual sampling and testing of shallow ground water monitoring wells and visual analysis for LNAPLs in the six risers;
- routine maintenance of the leachate collection and gas collection and vent system;
- periodic mowing and inspection of the cap area for erosion and stressed vegetation; and
- fertilization twice a year, once in the fall and in the spring, and annual reseeding in the fall.

Semi-annual monitoring for indicator parameters was initiated in October 1991. The ground water monitoring portion of the remedy consisted of collecting baseline ground water data from five wells (two background and three compliance wells) on a semi-annual basis for a period of five years. The purpose of the baseline data was to determine concentration variability and to evaluate the effectiveness of the remedy. Semi-annual ground water monitoring has continued through the April 2009 sampling event.

The Site's 2005 O&M Plan Addendum addressed recommendations of the 2004 FYR and included several changes to the major actions outlined in the 1990 O&M Plan, including:

- On the recommendation of the site landscaper, fertilization and reseeding will occur on an as-needed basis.
- Mowing and cap inspection will occur quarterly. Mowing will occur more frequently during the rainy season, if needed.
- Semi-annual reports will include a discussion about data quality and other quality assurance/quality control (QA/QC) protocols. The holding and extraction times, method blanks, and matrix spike recoveries will be reviewed and documented. Information on equipment blanks, triplicate blanks, and field duplicates will also be summarized in the reports.

The Site's ROD estimated annual O&M costs of $24,900. The Site's 1990 O&M Plan provided an annual estimated O&M cost of $77,816 for the first year and $70,251 for all subsequent years.

Actual O&M costs for calendar years 2004 through 2008 are presented in Table 2. The average annual cost in the past five years was $48,000, significantly less than the $70,000 estimated in the 1990 O&M Plan.

Table 2: Annual O&M Costs

Year	Total Cost (rounded to the nearest $1,000)
2004	$41,000
2005	$66,000
2006	$52,000
2007	$49,000
2008	$30,000

5.0 Progress Since the Last Five-Year Review

5.1 Protectiveness Statement from Previous Five-Year Review

The protectiveness statement from the Site's 2004 FYR stated the following:

"*Although monitoring well data over the past five years indicate that concentrations of several contaminants have exceeded their respective action levels as expressed in the ROD and identified in the 1990 O&M Plan, a system is in place to monitor these intermittent releases of low contaminant levels emanating from the landfill. The remedy is functioning as designed and envisioned, and there is no evidence of potential or actual exposures occurring (e.g., there are no complete exposure pathways expected to result in unacceptable risk, the institutional controls and access controls are in place and maintained, etc.).*

Because the remedy is protective, the Site is protective of human health and the environment."

In a letter dated October 27, 2004, the FDEP concurred "...with the Recommendations and Follow-up Actions presented in the [FYR] report. They appear to be adequate for ensuring that the remedy remains protective of human health and the environment."

5.2 Status of Recommendations and Follow-up Actions from Previous Five-Year Review

The 2004 FYR included 22 issues and recommendations. Table 3 provides a summary of all recommendations made in the 2004 FYR, as well as follow up actions taken to address the recommendations.

Table 3: Progress on Recommendations from the 2004 FYR

Section	Recommendations	Party Responsible	Action Taken and Outcome	Date of Action
5.1	Redevelop the deep monitoring wells and perform a onetime sampling of these deep wells.	PRP contractor	The deep monitoring wells were redeveloped and sampled.	Prior to October 2004
5.2	Update the O&M Plan to acknowledge changes to the cleanup levels which would be used as actions levels today for the indicator parameters.	PRP contractor	The current ARARs were included in the 2005 O&M Addendum.	April 2005
5.2	Update the O&M Plan to add MW-5A, a shallow down gradient well, to the semi-annual ground water monitoring program.	PRP contractor	MW-5A was added to the semi-annual monitoring program in the 2005 O&M Addendum.	April 2005

Section	Recommendations	Party Responsible	Action Taken and Outcome	Date of Action
5.2	Update the O&M Plan to remove MW-2A from the ground water monitoring system.	PRP contractor	MW-2A was removed from the semi-annual monitoring program in the 2005 O&M Addendum.	April 2005
5.2	Update the O&M Plan to address the status of the outer perimeter fence. This update must specifically address whether or not the outer fence should remain part of the maintenance plan.	PRP contractor	The 2005 O&M Addendum stated the inner fence will continue to be inspected during ground water sampling, but that the outer fence is the responsibility of the site owners.	April 2005
5.2	Update the O&M Plan to include an assessment of the integrity of wells and protective covers for adverse impacts (e.g., severe rust). If the structural integrity of a well is found to be at risk, then corrective action should be taken.	PRP contractor	Assessment of the integrity of the wells and protective covers was added to the 2005 O&M Addendum.	April 2005
5.2	Comply with the annual seeding and semi-annual fertilizing requirements of the cap cover as stated in the 1990 O&M Plan (see page 2-1 of the 1990 O&M Plan) or update the O&M Plan to reflect the desire to seed and fertilize on an "as-needed" basis.	PRP contractor	Seeding and fertilization of the cap cover on an "as-needed" basis was included in the 2005 O&M Addendum.	April 2005
5.3	Remove all trees and other vegetation growing in the rip rap flume which is potentially jeopardizing the integrity of the cap and site drainage.	PRP contractor	All trees and shrubs were removed from the rip rap flume.	Prior to October 2004
5.4	The protective cover for MW-2A should be replaced and all wells should be properly identified on the well cover.	PRP contractor	The protective cover was replaced and labeled.	Prior to October 2004
5.5	All shallow monitoring wells should be redeveloped.	PRP contractor	Shallow monitoring wells were redeveloped.	Prior to October 2004
5.6	Replace the missing vent cap on the 4-inch PVC gas vent pipe located along the east-west line of gas vents.	PRP contractor	The missing vent cap was replaced.	Prior to October 2004
5.7	Check the security of the inner perimeter fence at least semi-annually when the monitoring wells are sampled. The fence conditions should be noted in the O&M semi-annual monitoring report.	PRP contractor	The inner fence is checked during semi-annual sampling events.	Prior to October 2004

Section	Recommendations	Party Responsible	Action Taken and Outcome	Date of Action
5.8	Provide early notification to respective landowners when future sampling events are to occur so that access is not prohibited by loose animals.	PRP contractor	Efforts are made to contact landowners prior to sampling events.	April 2005 and ongoing
5.9	Replace the signs where missing from the inner perimeter fence and update the phone number for FDEP on the sign on the gate.	PRP contractor	Signs are replaced as needed and the FDEP number was updated.	Prior to October 2004
5.10	Submit semi-annual reports within three months of the sampling event instead of six months as has been the case over the past five years.	PRP contractor	Semi-annual reports are submitted within three months of sampling.	December 2004
5.10	Include a site location map and as-built site drawings for the landfill cap, leachate collection system and all monitoring wells in the semi-annual reports.	PRP contractor	Semi-annual reports include a site location map and as-built site drawings.	April 2005
5.10	Include potentiometric water level maps which clearly depict the ground water gradient during each sampling event in the semi-annual reports.	PRP contractor	Semi-annual reports include potentiometric water level maps.	April 2005
5.10	Include a comparison of concentrations to the action levels in the semi-annual reports.	PRP contractor	Semi-annual reports include a comparison of sample concentrations to the action levels.	April 2005
5.10	If needed based on comparison to the action levels, include a recommendation for further action in the semi-annual reports.	PRP contractor	No recommendations for further action have been needed based on the sample concentrations.	April 2005
5.10	Utilize the conceptual model outlined in Section VII (of 2004 FYR) to interpret past and future ground water monitoring results.	PRP contractor	The conceptual model has not been needed to interpret sample concentrations due to the low-flow sampling protocol.	April 2005
5.11	Continue semi-annual monitoring of the shallow wells.	PRP contractor	Semi-annual monitoring is ongoing.	April 2005 and ongoing
5.12	Improve community outreach program.	PRP contractor	There is no documentation of community outreach since the previous FYR. A mass mailing will be performed to inform the community.	Not documented

6.0 Five-Year Review Process

6.1 Administrative Components

EPA Region 4 initiated the FYR in February 2009 and scheduled its completion for November 2009. The FYR team was led by Peter Thorpe of EPA, Remedial Project Manager (RPM) for the Site, and also included the EPA Site Attorney Stedman Southall; EPA Community Involvement Coordinator (CIC) LaTonya Spencer; and contractor support provided to EPA by E² Inc. On February 12, EPA held a scoping call with the FYR team to discuss the Site and items of interest as they related to the protectiveness of the remedy currently in place. A review schedule was established that consisted of the following activities:

- community notification;
- document review;
- data collection and review;
- site inspection;
- local interviews; and
- FYR Report development and review.

6.2 Community Involvement

On March 24, 2009, a public notice was published in the *Pensacola News Journal* announcing the commencement of the FYR process for the Site, providing the RPM's and CIC's contact information, and inviting community participation in the process. The public notice is available in Appendix B.

The FYR report will be made available to the public once it has been finalized. Copies of the FYR report will be placed in the Site's designated public document repository: Pensacola Public Library, located at 200 West Gregory Street, Pensacola, Florida 32502. On April 28, 2009, as part of the FYR site inspection, E² Inc. staff visited the Pensacola Public Library. The 1999 and 2004 FYRs were both available, as well as the April and October 2005 Semi-Annual Reports. The 2005 Addendum to the O&M Plan was not found at the repository. Upon completion of the FYR, a public notice will be placed in the *Pensacola News Journal* to announce the availability of the FYR report in the document repository.

6.3 Document Review

This FYR included a review of relevant, site-related documents including the ROD, O&M reports, and recent monitoring data. Appendix A provides a complete list of the documents reviewed as part of the FYR.

Section 121 (d)(2)(A) of CERCLA specifies that Superfund RAs must meet any federal standards, requirements, criteria, or limitations that are determined to be Applicable or Relevant and Appropriate Requirements (ARARs). ARARs are those standards, criteria,

or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, RA, location, or other circumstance at a CERCLA site.

The 1986 ROD specified that the ground water monitoring system include the following indicator parameters: chromium, zinc, lead, priority pollutant acid extractables, priority pollutant purgeables, pesticides, and PCBs. At the time of the ROD, these contaminants were considered the most common and mobile found on site. The ROD stated the COCs the groundwater will be analyzed for, but it did not set clean up goals for them. The groundwater clean up goals were stated in the 1990 O&M plan for the following parameters: cadmium, chromium, benzene, toluene, chlorobenzene, ethylbenzene, and xylenes. Chlorobenzene was not analyzed until the October 2009 groundwater sampling. All samples were not-detect for chlorobenzene in October 2009. An ESD will be written to clarify the cleanup goals for the site's groundwater.

Action levels for cadmium and chromium were established as the higher of the background well samples or the 1990 Florida Drinking Water Standards. Action levels for the five organic COCs were selected based on Florida Drinking Water Standards and Florida Guidance Concentrations.

Table 4: Previous and Current ARARs for Ground Water COCs

Contaminant of Concern	1990 O&M Action Levels (mg/L)	Current ARARs (mg/L)	ARARs Changed?
Cadmium (total)	Higher of background well and 0.05	0.005[1]	More stringent
Chromium (total)	Higher of background well and 0.001	0.1[1]	Less stringent
Benzene	0.001	0.001[2]	No
Toluene	0.024	1.0[1]	Less stringent
Chlorobenzene	0.010	0.1[1]	Less stringent
Ethylbenzene	0.002	0.7[1]	Less stringent
Xylenes	0.050	10.0[1]	Less stringent

1. The Maximum Contaminant Level (MCL) under both the Federal Safe Drinking Water Act and the Florida Drinking Standards as of August 2009.
2. The more stringent Florida Drinking Water Standard is included in this Table. The Federal MCL for benzene, as of August 2009, is 0.005 mg/L.

The toxicity data have changed for six of the seven COCs. The current federal and Florida drinking water standard for cadmium is 0.005 mg/L, compared to the 0.010 mg/L action level selected in 1990 O&M Plan. However, because cadmium is rarely detected in ground water samples and this FYR indicates no exposure to site ground water, this change in the MCL does not affect the protectiveness of the remedy. The new drinking water standards for chromium, toluene, chlorobenzene, ethylbenzene, and xylenes are less stringent than those identified in the 1990 O&M Plan and therefore do not affect the protectiveness of the remedy.

6.4 Data Review

Shallow wells

Data for shallow ground water wells sampled from April 2004 through April 2009 was reviewed and compared to the current ARARs. Down-gradient MW-5A was constructed and sampled beginning in October 2004 to replace MW-2A. The data are presented in Table 5.

Table 5: Sampling Data for Shallow Monitoring Wells

Contaminant of Concern	Sample Date	Monitoring Well[4]							
		MW-1A	MW-2A	MW-4A	MW-5A	MW-6A	MW-7A	MW-17A	MW-18A
cadmium[1] (total)	Apr-04	ND	ND	ND	NA[5]	ND	ND	ND	ND
	Oct-04	ND	ND	ND	ND	ND	ND	ND	ND
	Apr-05	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Oct-05	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Apr-06	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Oct-06	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Apr-07	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Oct-07	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Apr-08	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Oct-08	ND	NA[5]	ND	ND	ND	ND	ND	**0.00679**
	Apr-09	ND	NA[5]	ND	ND	ND	ND	ND	ND
chromium[2] (total)	Apr-04	ND	**0.0193**	ND	NA[5]	ND	ND	ND	ND
	Oct-04	ND	ND	ND	ND	ND	ND	ND	ND
	Apr-05	ND	NA[5]	ND	ND	ND	**0.0117**	NA[5]	NA[5]
	Oct-05	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Apr-06	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Oct-06	**0.0951**	NA[5]	ND	ND	ND	**0.0101**	ND	ND
	Apr-07	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Oct-07	ND	NA[5]	**0.0123**	ND	**0.0216**	**0.04**	ND	ND
	Apr-08	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Oct-08	**0.0165**	NA[5]	ND	ND	ND	**0.0234**	ND	ND
	Apr-09	ND	NA[5]	ND	ND	ND	ND	ND	ND
benzene[3]	Apr-04	ND	ND	ND	NA[5]	**0.001**	ND	ND	ND
	Oct-04	ND	ND	ND	ND	ND	ND	ND	ND
	Apr-05	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Oct-05	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Apr-06	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Oct-06	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Apr-07	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Oct-07	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Apr-08	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Oct-08	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Apr-09	ND	NA[5]	ND	ND	ND	ND	ND	ND
toluene[3]	Apr-04	ND	ND	ND	NA[5]	ND	ND	ND	ND
	Oct-04	ND	ND	ND	**0.0095**	ND	ND	ND	ND
	Apr-05	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Oct-05	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Apr-06	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Oct-06	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Apr-07	ND	NA[5]	ND	ND	ND	ND	ND	ND

Contaminant of Concern	Sample Date	Monitoring Well[4]							
		MW-1A	MW-2A	MW-4A	MW-5A	MW-6A	MW-7A	MW-17A	MW-18A
	Oct-07	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Apr-08	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Oct-08	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Apr-09	ND	NA[5]	**0.0006**	ND	ND	**0.0055**	ND	**0.0012**
ethylbenzene[3]	Apr-04	ND	ND	ND	NA[5]	ND	ND	ND	ND
	Oct-04	ND	ND	ND	ND	ND	ND	ND	ND
	Apr-05	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Oct-05	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Apr-06	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Oct-06	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Apr-07	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Oct-07	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Apr-08	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Oct-08	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Apr-09	ND	NA[5]	ND	ND	ND	ND	ND	ND
methyl tertiary-butyl ether[1]	Apr-04	ND	ND	ND	NA[5]	ND	ND	ND	ND
	Oct-04	ND	ND	ND	ND	ND	ND	ND	ND
	Apr-05	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Oct-05	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Apr-06	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Oct-06	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Apr-07	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Oct-07	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Apr-08	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Oct-08	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Apr-09	ND	NA[5]	ND	ND	ND	ND	ND	ND
xylenes[1]	Apr-04	ND	ND	ND	NA[5]	ND	ND	ND	ND
	Oct-04	ND	ND	ND	ND	ND	ND	ND	ND
	Apr-05	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Oct-05	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Apr-06	ND	NA[5]	ND	ND	ND	ND	NA[5]	NA[5]
	Oct-06	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Apr-07	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Oct-07	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Apr-08	ND	NA[5]	ND	ND	ND	ND	ND	ND
	Oct-08	ND	NA[5]	ND	ND	ND	**0.0006**	ND	ND
	Apr-09	ND	NA[5]	ND	ND	ND	ND	ND	ND

[1] Detection limit of 0.005 mg/L
[2] Detection limit of 0.010 mg/L
[3] Detection limit of 0.001 mg/L
[4] All units mg/L
[5] Well not sampled
NA = Not Analyzed
ND = Not Detected at concentrations above the method detection limit

Overall, there were six ground water sampling events that had detectable levels of total chromium, but all of which were below cleanup levels. There was only one detection of cadmium during the review period in MW-18A in October 2008 and it was above the current cleanup levels.

Of the organic contaminants, benzene was detected at cleanup levels in MW-6A in April 2004, xylene was detected below cleanup levels in MW-7A in April 2009, and toluene was detected below cleanup levels in four samples.

The shallow well monitoring data does not include analysis of chlorobenzene, as selected in the 1990 O&M Plan. Chlorobenzene was analyzed in the October 2009 groundwater sampling event and all samples were non-detect.

Deep wells

Based on recommendations in the previous FYR, the Site's deep monitoring wells were redeveloped and sampled in October 2004 (Table 6). Chromium was detected in deep wells MW-5B and MW-6B, south and southwest of the Site, but the concentrations were below cleanup levels. No volatile organics were detected in any samples. The deep wells have not been sampled since 2004. The results from the 2004 sampling event are presented in Table 6.

The deep well monitoring data do not include analysis of chlorobenzene, as selected in the 1990 O&M Plan. All future groundwater sampling events will include the analysis of chlorobenzene. The October 2009 groundwater sampling was analyzed for chlorobenzene and all samples were non-detect.

Table 6: 2004 Sampling Data for Deep Monitoring Wells

Contaminant of Concern	Monitoring Well[4]				
	MW-1B	MW-4B	MW-5B	MW-6B	MW-7B
cadmium (total)[1]	ND	ND	ND	ND	ND
chromium (total)[2]	ND	ND	**0.052**	**0.0133**	ND
benzene[3]	ND	ND	ND	ND	ND
toluene[3]	ND	ND	ND	ND	ND
ethylbenzene[3]	ND	ND	ND	ND	ND
methyl tert-butyl ether[1]	ND	ND	ND	ND	ND
M-p-xylene[3]	ND	ND	ND	ND	ND
O-xylene[3]	ND	ND	ND	ND	ND

[1] Detection limit of 0.005 mg/L
[2] Detection limit of 0.010 mg/L
[3] Detection limit of 0.001 mg/L
[4] All units mg/L

6.5 Site Inspection

On April 28, 2009, the FYR site inspection was performed by the following participants: Peter Thorpe of EPA Region 4, Theresa Pepe of FDEP, Scott Miller of Clean Sites Environmental Services, Inc., and Amanda Goyne and Ryan Burdge of E² Inc. The purpose of the inspection was to inspect the general condition of the Site and take photographs.

During the site inspection, participants observed the work that has been completed in accordance with the Site's ROD and O&M Plan, including the soil stabilization cap, the leachate collection system, the methane gas collection and venting system, and the inner and outer fences.

The Site was well-maintained and vegetation has been established on the cap to ensure proper surface water drainage during rain events. A sign was posted at the northwest corner of the outer fence identifying the area as a Superfund site, and "No Trespassing" signs and warnings against disturbing the soil were located in multiple locations on the fence. There was a hole cut by trespassers in the northern wall of the inner fence, as well as an area dug out below the western wall of the inner fence through which trespassers could gain access to the Site. The holes in the fence have since been repaired. The site manager reported that trespassing has been an ongoing problem at the Site, but does not think the trespassing has affected the remedy. Two of the monitoring wells were not secured at the time of the site inspection. The locks on these two wells have since been repaired.

E² Inc. visited the Escambia County Clerk of the Circuit Court and Comptroller office on April 28, 2009. The Site consists of a single property located approximately 600 feet south of Saufley Field Road, near the intersection of Saufley Field Road and Parliament Drive. The Escambia County parcel number for the Site is 022S313000001008. Table 7 summarizes the available information found at the Escambia County Clerk's office and online from the U.S. District Court for the Northern District of Florida.

Table 7: Publicly Available Deed Documents

Date	Type of Document	Description	Book #	Page #
1977	Deed	Deed establishing Walter Dugger and Celia Dugger as owners of the Site.	1125	624
1983	Judgment	Document states that the owner agrees to help with the RI/FS in any way he can, and upon completion, the Site will be sold and proceeds used to pay for the cleanup.	1755	993
1988	Consent Decree	Document establishes PRP responsibilities and remedy requirements. All Remedial Action reports and O&M Plans are incorporated by reference.	NA	NA

Date	Type of Document	Description	Book #	Page #
1989	Letter of Agreement	Document states that the owner grants site access to EPA, EPA contractors, FDER, the U.S. Navy, and Reichold Chemical Company.	2650	920
1992	Easement	Document establishes a conservation easement on the Site.	3210	516

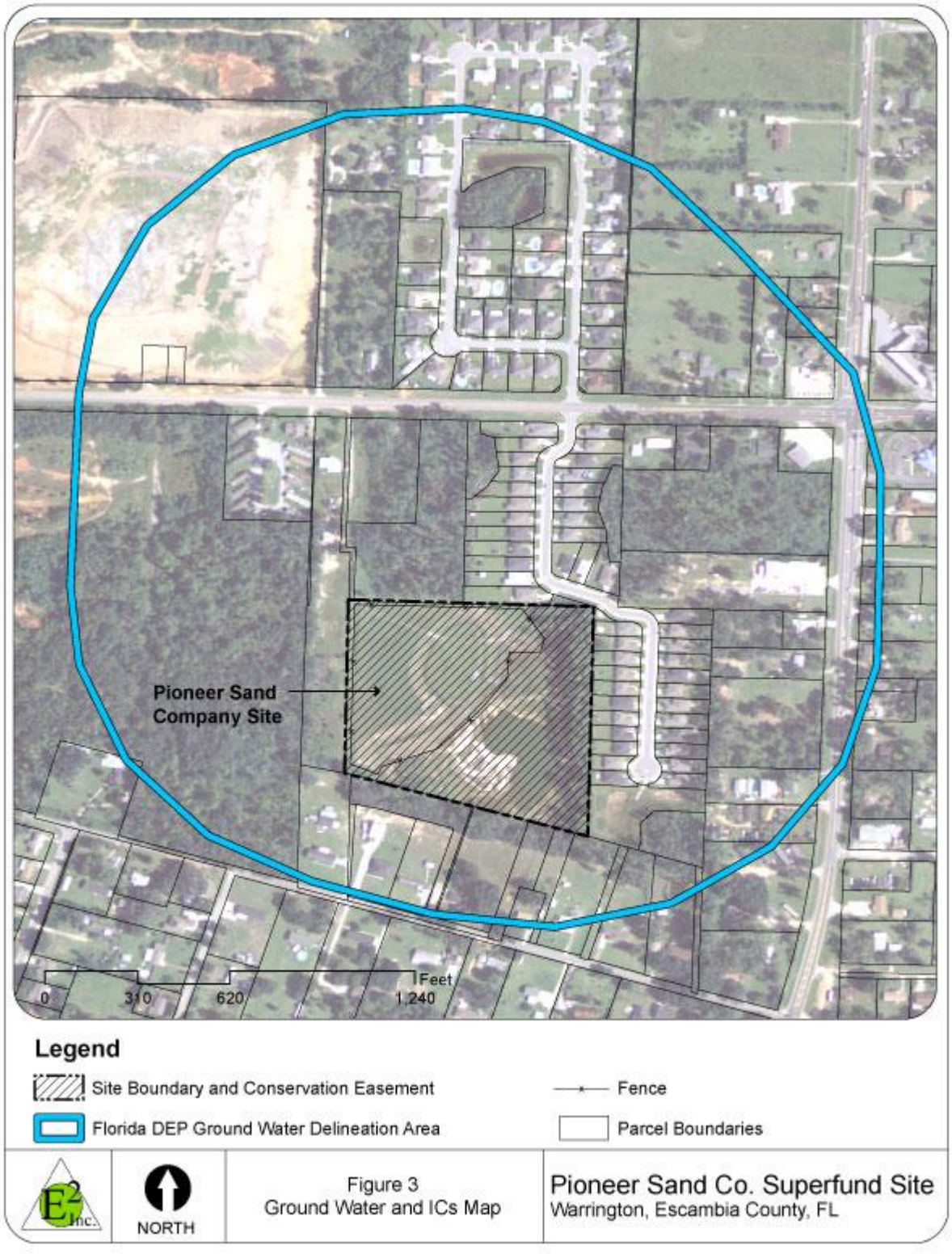
The Site's document repository, Pensacola Public Library, located at 200 West Gregory Street in Pensacola, was also visited as part of the FYR process. Relevant site documents available at the repository at the time of the visit included the 1999 and 2004 FYRs and the January and April 2005 semi-annual reports.

Tables 8 lists the ICs associated with the Site.

Table 8: IC Summary Table

Media	ICs Needed?	ICs Called for in the Decision Documents?	Impacted Parcel(s)	IC Objective	Instrument in Place
Soil, Ground Water	Yes	No	022S3130 00001008	Protect integrity of the remedy.	Conservation Easement
Ground Water	Yes	No	022S3130 00001008	Restrict installation of ground water wells.	The Site lies within a Florida delineated ground water area, which restricts well placement.[1]
1. Florida's ground water delineation information can be found online at: http://www.dep.state.fl.us/water/ground water/delineate.htm					

Figure 3: IC Base Map and Florida Delineated Ground Water Area



Disclaimer: This map and any boundary lines within the map are approximate and subject to change. The map does not purport to be a survey. The map is for informational purposes only regarding EPA's response actions at the Site, and is not intended for any other purpose.

6.6 Interviews

During the FYR process, interviews were conducted with parties impacted by the Site, including the current landowners, and regulatory agencies involved in site activities or aware of the Site. The purpose of the interviews was to document the perceived status of the Site and any perceived problems or successes with the phases of the remedy that have been implemented to date. The interviews were conducted in person during the site inspection on April 28 and 29, 2009 and over the phone on July 1, 2009. Interviews are summarized below. Complete interviews are included in Appendix C.

Theresa Pepe: Ms. Pepe is the FDEP Project Manager for the Site. Ms. Pepe is pleased with the site conditions and believes the remedy is functioning as intended. Ms. Pepe recommends continued upkeep of the fence and semi-annual monitoring.

Scott Miller: Mr. Miller is the O&M site manager from CSES Inc. Mr. Miller believes the remedy is functioning well and that the biggest concern at the Site is trespassing, but feels that trespassers are not at risk of exposure to COCs.

Keith Wilkins: Mr. Wilkins is the Deputy Bureau Chief of the Neighborhood and Community Services Bureau of Escambia County. Mr. Wilkins thinks the Site is not having any negative effects on the surrounding community. Mr. Wilkins has not received any complaints about the Site and the only inquiries were related to the development of the adjacent subdivision.

Five residents adjacent to the Site were interviewed. Three residents in the new development located northeast of the Site expressed interest in learning more about the Site. An updated fact sheet about the Site, including EPA contact information, was left with these residents (Appendix F). The two residents interviewed who live in the older homes located south of the Site and who have monitoring wells on their property felt well informed about the Site. One resident stated that the trespassers include persons from outside the community that enter the Site to fish in the large pond.

7.0 Technical Assessment

7.1 Question A: Is the remedy functioning as intended by the decision documents?

The review of the site documents, monitoring data, and the site inspection indicate that the remedy is functioning as intended by the ROD. The RAOs identified in the ROD include:

- maintain or improve the surface and ground water quality on Site;
- maintain the natural ground water quality adjacent to the Site;
- minimize leachate generation within the fill material;
- minimize human contact with the sludges and small pond waters; and
- establish a ground water monitoring program.

Ground water monitoring over the past five years has shown occasional detections of chromium and benzene at or below cleanup levels in off-site monitoring wells. Chromium was also detected in the deep monitoring wells sampled once in 2004. The presence of these contaminants indicates that the landfill continues to serve as a source of potential ground water contamination, and continued ground water monitoring is needed. No LNAPL has been detected in the leachate collection system and gas material is not being generated. The remedy is functioning as designed.

On December 16, 1991, a conservation easement was signed by the owners of the site property, Mr. Walter Dugger and Mrs. Celia Dugger, to serve as an IC. An amended conservation easement, recorded on July 23, 1992, was granted by the property owners to the United States of America.

The Florida ground water delineation area has restricted installation of wells since 1994. In 2005 and 2007, FDEP and Gallet & Associates conducted surveys of shallow aquifer wells within one-half mile and one-quarter mile of Saufley Field, respectively (Appendices I and J). These surveys identified one active private well being used for potable purposes in the vicinity of the Site, but this well is located east of the Site and is therefore cross-gradient to the direction of ground water flow from the Site. Therefore, this well should not be affected by site ground water contamination.

Based on the site inspection and semi-annual reports, O&M activities are being conducted in accordance with the ROD. However, chlorobenzene has not been analyzed in ground water samples since it was selected as an indicator parameter in the 1990 O&M Plan. The October 2009 groundwater samples were analyzed for chlorobenzene and all samples were non-detect. All recommendations regarding site upkeep and semi-annual reporting have been completed by the O&M contractor, including requests for increased data validation by EPA.

There have been no instances of large variances in annual O&M costs that would suggest potential remedy problems or remedy issues. Fence damage could possibly be reduced by posting signage aimed at persons entering the Site to fish in the large pond.

No early indicators of potential issues that could lead to remedy failure or jeopardize the protectiveness were identified during this FYR.

7.2 Question B: Are the exposure assumptions, Toxicity Data, Cleanup Levels, and Remedial Action Objectives (RAOs) Used at the Time of Remedy Selection Still Valid?

The toxicity data have changed for six of the seven COCs identified in the O&M Plan. The current federal and Florida drinking water standard for cadmium is 0.005 mg/L, compared to the 0.010 mg/L action level selected in 1990 O&M Plan. However, because cadmium is rarely detected in ground water samples and this FYR did not identify exposure to ground water impacted by site contaminants, this change in MCL does not affect the protectiveness of the remedy. The new drinking water standards for chromium, toluene, chlorobenzene, ethylbenzene, and xylenes are less stringent than those identified in the 1990 O&M Plan. The current remedy will meet these less stringent standards and therefore these changes also do not affect the protectiveness of the remedy.

The ROD specified which COCs the groundwater will be analyzed for, but it did not set clean up goals for them. The groundwater clean up goals were stated in the 1990 O&M plan. An ESD will be written to clarify the cleanup goals for the site's groundwater. There have been no other changes to exposure assumptions, toxicity data, or RAOs.

7.3 Question C: Has Any Other Information Come to Light That Could Call Into Question the Protectiveness of the Remedy?

The development of a residential subdivision of 44 single family homes along the east side of the Site in 2004 and the fence damage and trespassing at the Site suggest that additional community outreach could be beneficial. Site information was included in closing documents for home sales in the new subdivision and five residents were provided with an updated Site fact sheet (Appendix F). These homes are connected to municipal water supply and are not at risk of exposure to contaminated ground water. A mass mailing will be performed to the entire neighborhood to inform them about the Site.

There is no other information that calls into question the protectiveness of the remedy.

7.4 Technical Assessment Summary

The assessment of the Site for this FYR indicates that the selected remedy is functioning as intended by the Site's ROD and O&M Plan. The remedy is protective of human health and the environment because the contaminants are contained and no exposure pathways were identified in this FYR.

No LNAPL has been detected in the Site's leachate collection system, and gas material is not being generated. Since the implementation of low-flow sampling in October 2004, the detection rate of both cadmium and chromium in shallow wells has decreased.

However, the occasional detection of metal and organic contaminants in the shallow wells indicates that continued ground water monitoring is needed.

The 1986 ROD included an inventory of private wells and documented three residences that used a private well for potable water. The Florida ground water delineation area has restricted installation of wells near the Site since 1994. In 2005 and 2007, FDEP and Gallet & Associates conducted surveys of shallow aquifer wells within one-half mile and one-quarter mile of Saufley Field, respectively (Appendices I and J). These surveys identified one active private well being used for potable purposes in the vicinity of the Site, but this well is located east of the Site and is therefore cross-gradient to the direction of ground water flow from the Site. Therefore, residents are not at risk of exposure to drinking water from the shallow aquifer.

The 2004 sampling of the Site's deep wells showed contaminant migration in the deep aquifer for the first time. The 1986 ROD detailed the site characteristics that favored containment of COCs on Site and stated there was an extremely low probability of contamination reaching the deeper wells due to the low permeability of the underlying clay. However, the detection of chromium in the deep wells at concentrations below cleanup levels indicates that this contaminant might have migrated into the deep aquifer. The local municipal water supply is drawn from a well within the same deep aquifer, located approximately one mile southeast of the Site. Although the two wells in which chromium was detected are located to the west and southwest of the Site, further assessment is needed to ensure that there are no exposure routes through the deep aquifer.

Chlorobenzene has not been included in ground water monitoring although the 1990 O&M Plan calls for analysis of this chemical. Chlorobenzene will be analyzed in all future sampling events. The October 2009 groundwater sampling event was analyzed for chlorobenzene and all samples were non-detect.

8.0 Issues

Table 9 summarizes current site issues and their impact on remedy protectiveness.

Table 9: Current Site Issues

Issue	Affects Current Protectiveness?	Affects Future Protectiveness?
Trespassing and cutting of the site fence is an ongoing problem.	No	Yes
Chromium was detected below cleanup levels in the 2004 sampling of off-site deep wells. There has been no deep well sampling since 2004.	No	Yes
Chlorobenzene was selected as an indicator parameter in the O&M Plan but has not been sampled in ground water wells.	No	No
Specific ICs were not documented in the ROD. A conservation easement and ground water delineation area have since been put in place to protect the integrity of the remedy and to prevent exposure to contaminated materials. Groundwater clean up levels were stated in the 1990 O&M Plan, but they were not documented in the ROD.	No	Yes

9.0 Recommendations and Follow-up Actions

Table 10 presents recommendations and follow-up actions to address the issues identified during the FYR.

Table 10: Recommendations to Address Current Site Issues

Issue	Recommendations/ Follow-Up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness?	
					Current	Future
Trespassing and cutting of the site fence is an ongoing problem.	Continue semi-annual inspection of fence integrity and post signage suggesting people refrain from fishing.	PRP	EPA	12/31/2009	No	Yes
Chromium was detected below cleanup levels in the 2004 sampling of off-site deep wells. There has been no deep well sampling since 2004.	Develop a plan for and conduct additional sampling of deep wells to evaluate potential migration of contamination into the deep aquifer.	PRP	EPA	04/30/2010	No	Yes
Chlorobenzene was selected as an indicator parameter in the O&M Plan but has not been sampled in ground water wells.	Chlorobenzene should be included in all future ground water sampling.	PRP	EPA	04/30/2010	No	No

Issue	Recommendations/ Follow-Up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness?	
					Current	Future
Specific ICs were not documented in the ROD. A conservation easement and ground water delineation area have since been put in place to protect the integrity of the remedy and to prevent exposure to contaminated materials. Groundwater clean up levels were stated in the 1990 O&M Plan, but they were not documented in the ROD.	Develop an ESD to clarify the groundwater clean up goals and the need for ICs	EPA	EPA	12/31/2010	No	Yes

10.0 Protectiveness Statements

The remedy currently protects human health and the environment in the short-term because the exposure pathways that may result in unacceptable risks through exposure to, or ingestion of contaminated ground water are being controlled by the remedy. However, in order for the remedy to be protective in the long-term, ongoing ground water sampling will be performed to ensure long-term protectiveness.

11.0 Next Review

This is a policy site, because the Record of Decision was signed before the effective date of the Superfund Amendments and Reauthorization Act that requires ongoing FYRs as long as waste is left on Site that does not allow for unrestricted use and unlimited exposure. An addendum to this FYR including a protectiveness determination will be completed by December 31, 2010. The next FYR for the Pioneer Sand Site is required by December 2014, five years from the date of this review.

Appendix A: List of Documents Reviewed

EPA Record of Decision: Pioneer Sand Co. EPA ID: FLD056116965. Warrington, FL. September 26, 1986.

Clean Sites Environmental Services, Inc., 2004, Pioneer Sand Company Site, Semiannual Report for Operation and Maintenance, April 2004.

Clean Sites Environmental Services, Inc., 2004, Pioneer Sand Company Site, Semiannual Report for Operation and Maintenance, October 2004.

Clean Sites Environmental Services, Inc., 2005, Pioneer Sand Company Site, Semiannual Report for Operation and Maintenance, April 2005.

Clean Sites Environmental Services, Inc., 2005, Pioneer Sand Company Site, Semiannual Report for Operation and Maintenance, October 2005.

Clean Sites Environmental Services, Inc., 2006, Pioneer Sand Company Site, Semiannual Report for Operation and Maintenance, April 2006.

Clean Sites Environmental Services, Inc., 2006, Pioneer Sand Company Site, Semiannual Report for Operation and Maintenance, October 2006.

Clean Sites Environmental Services, Inc., 2007, Pioneer Sand Company Site, Semiannual Report for Operation and Maintenance, April 2007.

Clean Sites Environmental Services, Inc., 2007, Pioneer Sand Company Site, Semiannual Report for Operation and Maintenance, October 2007.

Clean Sites Environmental Services, Inc., 2008, Pioneer Sand Company Site, Semiannual Report for Operation and Maintenance, April 2008.

Clean Sites Environmental Services, Inc., 2008, Pioneer Sand Company Site, Semiannual Report for Operation and Maintenance, October 2008.

Clean Sites Environmental Services, Inc., 2009, Pioneer Sand Company Site, Semiannual Report for Operation and Maintenance, April 2009.

Clean Sites Environmental Services, Inc., 2005, Pioneer Sand Company Site, Operation and Maintenance Addendum, 2005.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Information System (CERCLIS) Site Information accessed from Web site http://cfpub.epa.gov/supercpad/cursites/csitinfo.cfm?id=0400684 February 2009-October 2009.

Consent Decree filed with the United States District Court for the Northern District of Florida dated July 8, 1988. Civil No. 88-30168WS United States of America v. Reichold Chemicals Inc.

Environmental Resources and Management-South, Inc., 1990, Pioneer Sand Superfund Site Operation and Maintenance Plan, August 1990.

Superfund Five-Year Review Report. Pioneer Sand Site. Escambia County, Florida. US EPA. August 1999.

Superfund Second Five-Year Review Report for Pioneer Sand Company. Pensacola, Escambia County, Florida. EPA ID: FLD 056116965. US EPA. November 2004.

U.S. District Court for the Northern District of Florida, 1988, Consent Decree, Pioneer Sand Company Site, Pensacola, Escambia County, Florida, Civil Action No. 88-30168WS, May 1988.

Appendix B: Press Notice

U. S. Environmental Protection Agency, Region 4
Announces a Five-Year Review
for the Pioneer Sand Company Superfund Site,
Pensacola, Escambia County, FL

Purpose/Objective: The U.S. Environmental Protection Agency (EPA) is conducting a Five-Year Review of the remedy for the Pioneer Sand Company site (Site) in Pensacola, Florida. The purpose of the Five-Year Review is to ensure that the selected cleanup actions effectively protect human health and the environment.

Site Background: The Pioneer Sand Company site is located in Pensacola, Florida, and covers approximately 11 acres. The Site includes an inactive quarry which received shredded auto parts, construction debris, and industrial sludge. From 1974 to 1978 the Site received phenol and resin compounds from Newport Industries (currently Reichhold Chemical Company) and industrial wastes and sludges from the Pensacola Naval Air Station. Approximately 75 percent of the Site is an excavation pit, while the remaining 25 percent is the fill area where the wastes were deposited. In 1981 the Florida Department of Environmental Regulation (FDER) restricted dumping at the Site and contaminants were later detected in soil, wells, and a surface pond on site. Sampling of nearby private wells indicated no off-site ground water contamination. The Site was listed on the National Priorities List (NPL) in 1983.

Cleanup Actions: The 1986 ROD was signed to address ground water contamination. Cleanup actions included the stabilization of approximately 7,547 cubic yards of sludge, construction and operation of a leachate collection trench, installation of a four acre synthetic cover system, and installation of gas venting and collection system. Ground water monitoring is ongoing. Cleanup activities were completed in the early 1990s and the Site was deleted from the NPL on February 8, 1993. EPA has completed two Five-Year Reviews of the Site, in 1999 and 2004; these reviews concluded that the selected remedy remains protective of human health and the environment.

Five-Year Review Schedule: The National Contingency Plan requires that remedial actions that result in any hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure be reviewed every five years to ensure protection of human health and the environment. The third of these Five-Year Reviews for this Site will be completed by December 2009.

EPA invites community participation in the Five-Year Review process: EPA is conducting this Five-Year Review to evaluate the effectiveness of the remedy and to ensure that the remedy remains protective of human health and the environment. As part of the Five-Year Review process, EPA is available to answer any questions about the Site. Community members who have questions about the Site, the Five-Year Review process, or who would like to participate in a community interview, are asked to contact the following:

Peter Thorpe
Phone: 404-562-9688
thorpe.peter@epa.gov

L'Tonya Spencer, Community Involvement Coordinator
404-562-8463 / 1-800-564-7577 (Toll Free)
spencer.latonya@epa.gov

U.S. EPA, Region 4 – Mailing Address
61 Forsyth St. S.W.
Atlanta, GA 30303-8960

Local Document Repository
John C. Pace Library - University of West Florida
11000 University Parkway
Pensacola, FL 32514

Online: *http://cfpub.epa.gov/supercpad/cursites/csitinfo.cfm?id=0400684*

Appendix C: Interview Forms

Site Name: Pioneer Sand Co. **EPA ID No.: FLD056116965**
Interviewer Name: Ryan Burdge **Affiliation: E^2 Inc.**
Subject's Name: Scott Miller **Affiliation: Clean Sites Environmental Services Inc.**
Time: 11:00 am **Date: April 28, 2009**
Type of Interview: In Person
Location of Interview: At Site

O&M Contractor

1. **What is your overall impression of the project?**
   It is fine. The monitoring data is favorable, especially with the low flow sampling. The biggest issue is the trespassing.

2. **Is the remedy functioning as expected? How well is the remedy performing?**
   Yes, it is performing well. The cap is in place and the data are good.

3. **What does the monitoring data show? Are there any trends that show contaminant levels are decreasing?**
   There are not consistent levels of contamination. I was surprised in the early days that we did not see well or leachate contamination.

4. **Is there a continuous on-site O&M presence? If so, please describe staff and activities. If there is not a continuous on-site presence, describe staff and frequency of site inspections and activities.**
   No. We sample in April and October. When we are here, we look at the fence and talk to a nearby resident. The site is mowed generally once per quarter by landscapers, with extra mowing in wet season.

5. **Have there been any significant changes in the O&M requirements, maintenance schedules, or sampling routines since start-up or in the last five years? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.**
   Not in the last five years. We mowed more frequently in the beginning, but switched to a quarterly schedule.

6. **Have there been unexpected O&M difficulties or costs at the site since start-up or in the last five years? If so, please give details.**
   Not in the last five years. More than five years ago there was a washout at part of the site.

7. **Have there been opportunities to optimize O&M, or sampling efforts? Please describe changes and resultant or desired cost savings or improved efficiency.**
   No.

8. **Do you have any comments, suggestions, or recommendations regarding the project?**
   Educating the new subdivision regarding trespassing.

Interview Form for Pioneer Sand Co. Five-Year Review

Site Name: Pioneer Sand Co. **EPA ID No.: FLD056116965**
Interviewer Name: Ryan Burdge **Affiliation: E2 Inc.**
Subject's Name: Theresa Pepe **Affiliation: FDEP**
Time: 11:00 am **Date: April 28, 2009**
Type of Interview: In Person
Location of Interview: At Site

State of Florida

1. **What is your overall impression of the project?**
   The Site looks good and it is maintained well.

2. **How well do you believe the remedy currently in place is performing?**
   It is performing as intended. The cap is maintained and although the trespassing through holes in the fence is a problem, there is no exposure risk. I have no negative comments.

3. **Are you comfortable with the institutional controls required for the Site and their current status of implementation?**
   Yes, the easement is on file and the fencing is adequate.

4. **Are you aware of any complaints or inquiries regarding environmental issues or the remedial action from residents in the last five years?**
   No, not since the last review. There were some questions asked then. The Northwest District may have received some comments, but my office has not.

5. **Has your office conducted any site-related activities or communications in the last five years? If so, please give purpose and results of these activities.**
   No.

6. **Are you aware of any changes to state laws that might affect the protectiveness of the remedy? Are you aware of any changes in projected land use at the Site?**
   No.

7. **Do you have any comments, suggestions, or recommendations regarding the site's management or operation?**
   Continue with the semi-annual reporting, repair the fence, and repair monitoring wells as needed.

Interview Form for Pioneer Sand Co. Five-Year Review

Site Name: Pioneer Sand Co. **EPA ID No.: FLD056116965**
Interviewer Name: Peter Thorpe **Affiliation: EPA**
Subject's Name: Keith Wilkins **Affiliation: Escambia County**
Time: 3:00 pm **Date: July 1, 2009**
Type of Interview: Phone

Local Government

1. **Are you aware of the former environmental issues at the Pioneer Sand Co. site and of the cleanup that took place there?**
   Yes, I have a good understanding of the Site.

2. **What are your views about current site condition, problems, or related concerns?**
   From what I have seen and heard, the conditions are fine. My concerns would be that the new homes on Dandelion Lane are not affecting the site in any way, access and security are okay, and that signs are still posted on the surrounding fence. Also, the ROD suggested that when the surrounding areas were zoned, they should be zoned as industrial. The site is currently surrounded by residential zones.

3. **What effect has this site had on the surrounding community?**
   None that I am aware of. I have not heard any issues and the surrounding property values have not lowered.

4. **Has the local government received any citizen complaints or inquiries regarding environmental issues at this site?**
   No. The only inquires occurred during residential development.

5. **What effect has the continuing use of the site had on the community as a whole or the local government's responsibilities in particular?**
   There have been no negative effects for either. The community seems to be well informed, so the lack of complaints is likely not due to a lack of awareness.

6. **Are you aware of any changes to local laws that might affect the protectiveness of the remedy? Are you aware of any changes in projected land use at the site?**
   No changes.

7. **Do you feel well informed about the site's activities and progress? If not, what methods would you recommend EPA use to disseminate more information?**
   I feel well informed. We appreciate communication with EPA about the site and would like to continue to be informed about site visits.

8. **Do you have any comments, suggestions, or recommendations regarding the project?**
   No.

Interview Form for Pioneer Sand Co. Five-Year Review

Site Name: Pioneer Sand Co. **EPA ID No.: FLD056116965**
Interviewer Name: Amanda Goyne and Ryan Burdge **Affiliation: E^2 Inc.**
Subject's Name: Resident 1 **Affiliation: Resident**
Time: 1:30 pm Date: April 29, 2009
Type of Interview: In Person
Location of Interview: Resident Home

1. **Are you aware of the environmental issues at the Pioneer Sand Co. Superfund Site and what cleanup activities have occurred?**
   I am vaguely aware. I read the handout EPA left here yesterday.

2. **What are your views about current Site conditions or related concerns?**
   My concerns are the erosion and steep drop-off near my property. It has eroded several feet in the time I have lived here (9 years).

3. **What effect has this Site had on the surrounding community, if any?**
   None that I know of.

4. **Have there been any problems with unusual or unexpected activity at the site, such as emergency response, vandalism, or trespassing?**
   No.

5. **Should EPA do more to keep involved parties and surrounding neighbors informed of activities at the Site? What methods would you recommend?**
   I would like to know the results of the sampling of the well on my property, how long sampling of this well will continue, and if/when I could use the well for irrigation after sampling is over.

6. **Do you have any comments, suggestions, or recommendations regarding the Site's management or operations?**
   None.

Interview Form for Pioneer Sand Co. Five-Year Review

Site Name: Pioneer Sand Co. **EPA ID No.: FLD056116965**
Interviewer Name: L'Tonya Spencer and Amanda Goyne **Affiliation: EPA and E^2 Inc.**
Subject's Name: Resident 2 **Affiliation: Resident**
Time: 12:30 pm Date: April 28, 2009
Type of Interview: In Person
Location of Interview: Resident Home

1. **Are you aware of the environmental issues at the Pioneer Sand Co. Superfund Site and what cleanup activities have occurred?**
   Yes.

2. **What are your views about current Site conditions or related concerns?**
   It is 1000% better than before. They have done so much work up there.

3. **What effect has this Site had on the surrounding community, if any?**
   The water has been checked and it is fine, but it smells like turpentine when it sits in the sun. We use it for irrigation but not in the house. The person who put in our well had heard complaints from others in the area. The well driller told me us not to drink it but other people tested it and said it was okay.

4. **Have there been any problems with unusual or unexpected activity at the site, such as emergency response, vandalism, or trespassing?**
   No.

5. **Should EPA do more to keep involved parties and surrounding neighbors informed of activities at the Site? What methods would you recommend?**
   No. Scott Miller [of CSES] does a good job [keeping me informed].

6. **Do you have any comments, suggestions, or recommendations regarding the Site's management or operations?**
   No.

Interview Form for Pioneer Sand Co. Five-Year Review

Site Name: Pioneer Sand Co. **EPA ID No.: FLD056116965**
Interviewer Name: L'Tonya Spencer and Amanda Goyne **Affiliation: EPA and E^2 Inc.**
Subject's Name: Resident 3 **Affiliation: Resident**
Time: 1:00 pm Date: April 28, 2009
Type of Interview: In Person
Location of Interview: Resident Home

1. **Are you aware of the environmental issues at the Pioneer Sand Co. Superfund Site and what cleanup activities have occurred?**
   No.

2. **What are your views about current Site conditions or related concerns?**
   None.

3. **What effect has this Site had on the surrounding community, if any?**
   No more than anything else.

4. **Have there been any problems with unusual or unexpected activity at the site, such as emergency response, vandalism, or trespassing?**
   I do not think so.

5. **Should EPA do more to keep involved parties and surrounding neighbors informed of activities at the Site? What methods would you recommend?**
   A sign on the fence with what it is all about.

6. **Do you have any comments, suggestions, or recommendations regarding the Site's management or operations?**
   No.

Interview Form for Pioneer Sand Co. Five-Year Review

Site Name: Pioneer Sand Co. **EPA ID No.: FLD056116965**
Interviewer Name: LaTonya Spencer and Amanda Goyne **Affiliation: EPA and E^2 Inc.**
Subject's Name: Resident 4 **Affiliation: Resident**
Time: 1:15 pm Date: April 28, 2009
Type of Interview: In Person
Location of Interview: Resident Home

1. **Are you aware of the environmental issues at the Pioneer Sand Co. Superfund Site and what cleanup activities have occurred?**
   Somewhat. My husband spoke with EPA a while ago.

2. **What are your views about current Site conditions or related concerns?**
   My husband tells me not to worry but I am concerned because of the signs.

3. **What effect has this Site had on the surrounding community, if any?**
   None

4. **Have there been any problems with unusual or unexpected activity at the site, such as emergency response, vandalism, or trespassing?**
   People fish over there all the time. They park in my driveway. They are from all over, not just the neighborhood.

5. **Should EPA do more to keep involved parties and surrounding neighbors informed of activities at the Site? What methods would you recommend?**
   I have been here for two years and this is the first time I have been spoken to anyone about the site.

6. **Do you have any comments, suggestions, or recommendations regarding the Site's management or operations?**
   Concern over the people fishing at the Site. Are the fish safe to eat?

Interview Form for Pioneer Sand Co. Five-Year Review

Site Name: Pioneer Sand Co. **EPA ID No.: FLD056116965**
Interviewer Name: L'Tonya Spencer and Amanda Goyne **Affiliation: EPA and E^2 Inc.**
Subject's Name: Resident 5 **Affiliation: Resident**
Time: 1:30 pm Date: April 28, 2009
Type of Interview: In Person
Location of Interview: Resident Home

1. **Are you aware of the environmental issues at the Pioneer Sand Co. Superfund Site and what cleanup activities have occurred?**
   Not really. Is that where they dumped the paint?

2. **What are your views about current Site conditions or related concerns?**
   I have some concerns when that happens anywhere.

3. **What effect has this Site had on the surrounding community, if any?**
   None.

4. **Have there been any problems with unusual or unexpected activity at the site, such as emergency response, vandalism, or trespassing?**
   Yes, trespassing. Trucks park here and people go between the fence somehow. I do not recognize the vehicles and I assume they are not from the neighborhood. I assume they are going to the pond.

5. **Should EPA do more to keep involved parties and surrounding neighbors informed of activities at the Site? What methods would you recommend?**
   Yes, let us know if it is safe back there.

6. **Do you have any comments, suggestions, or recommendations regarding the Site's management or operations?**
   I am more worried about the trespassing than the contamination.

Appendix D: Site Inspection Checklist

FIVE-YEAR REVIEW SITE INSPECTION CHECKLIST

I. SITE INFORMATION

Site name: Pioneer Sand Co.	**Date of inspection: 4/28/2009**
Location and Region: Warrington, FL/Region 4	**EPA ID: FLD056116965**
Agency, office, or company leading the five-year review: EPA, Region 4	**Weather/temperature: Partly cloudy/70°**

Remedy Includes: (Check all that apply)

- ☒ Landfill cover/containment
- ☒ Access controls
- ☐ Institutional controls
- ☐ Ground water pump and treatment
- ☐ Surface water collection and treatment
- ☐ Other
- ☐ Monitored natural attenuation
- ☐ Ground water containment
- ☐ Vertical barrier walls

Attachments: ☐ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** Scott Miller, Clean Sites (Name) | Project Manager/President (Title) | 2/28/2009 (Date)
   Interviewed ☒ at site ☐ at office ☐ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached _____

2. **O&M staff** _____ (Name) | _____ (Title) | mm/dd/yyyy (Date)
   Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

   Agency Florida Department of Environmental Protection
   Contact Theresa Pepe (Name) | Project Manager (Title) | 2/28/2009 (Date) | _____ (Phone No.)
   Problems; suggestions; ☒ Report attached _____

   Agency Escambia County, Neighborhood and Community Service Bureau
   Contact Keith Wilkins (Name) | Deputy Bureau Chief (Title) | 7/01 /2009 (Date) | _____ (Phone No.)
   Problems; suggestions; ☐ Report attached _____

4. **Other interviews** (optional) ☒ Report attached

Resident
Resident
Resident
Resident
Resident
Keith Wilkins

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1.	**O&M Documents**				
	☒ O&M manual	☒ Readily available	☐ Up to date	☐ N/A	
	☒ As-built drawings	☒ Readily available	☐ Up to date	☐ N/A	
	☒ Maintenance logs	☒ Readily available	☐ Up to date	☐ N/A	
	Remarks: _____				
2.	**Site-Specific Health and Safety Plan**		☐ Readily available	☐ Up to date	☒ N/A
	☐ Contingency plan/emergency response plan		☐ Readily available	☐ Up to date	☒ N/A
	Remarks: _____				
3.	**O&M and OSHA Training Records**		☐ Readily available	☐ Up to date	☒ N/A
	Remarks: _____				
4.	**Permits and Service Agreements**				
	☐ Air discharge permit		☐ Readily available	☐ Up to date	☒ N/A
	☐ Effluent discharge		☐ Readily available	☐ Up to date	☒ N/A
	☐ Waste disposal, POTW		☐ Readily available	☐ Up to date	☒ N/A
	☐ Other permits _____				
	Remarks:				
5.	**Gas Generation Records**		☒ Readily available	☒ Up to date	☒ N/A
	Remarks: Gas is not being generated by the source.				
6.	**Settlement Monument Records**		☐ Readily available	☐ Up to date	☒ N/A
	Remarks: _____				
7.	**Ground water Monitoring Records**		☒ Readily available	☒ Up to date	☐ N/A
	Remarks: _____				
8.	**Leachate Extraction Records**		☐ Readily available	☐ Up to date	☒ N/A
	Remarks: _____				
9.	**Discharge Compliance Records**				
	☐ Air	☐ Readily available	☐ Up to date	☒ N/A	
	☐ Water (effluent)	☒ Readily available	☐ Up to date	☐ N/A	
	Remarks: _____				
10.	**Daily Access/Security Logs**		☐ Readily available	☐ Up to date	☒ N/A
	Remarks: _____				

IV. O&M COSTS

1.	**O&M Organization**	
	☐ State in-house	☐ Contractor for State
	☐ PRP in-house	☒ Contractor for PRP
	☐ Federal Facility in-house	☐ Contractor for Federal Facility
	☐ Other _____	

2. **O&M Cost Records**

☒ Readily available ☒ Up to date

☐ Funding mechanism/agreement in place

Original O&M cost estimate $24,900 ☐ Breakdown attached

Total annual cost by year for review period if available

From 01/01/2004 Date	To 12/31/2004 Date	$41,000 Total cost	☐ Breakdown attached
From 01/01/2005 Date	To 12/31/2005 Date	$66,000 Total cost	☐ Breakdown attached
From 01/01/2006 Date	To 12/31/2006 Date	$52,000 Total cost	☐ Breakdown attached
From 01/01/2007 Date	To 12/31/2007 Date	$49,000 Total cost	☐ Breakdown attached
From 01/01/2008 Date	To 12/31/2004 Date	$30,000 Total cost	☐ Breakdown attached

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons: ____

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☒ Gates secured ☐ N/A

Remarks: A large hole was cut from the northern perimeter fence.

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☐ N/A

Remarks: There is a large sign at the northwest corner of the fence surrounding the site that identifies the area as an EPA Superfund site. Additional "no trespassing" and warning signs are posted on the outer fence. Signs on inner fence were faded.

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented ☐ Yes ☒ No ☐ N/A

Site conditions imply ICs not being fully enforced ☐ Yes ☒ No ☐ N/A

Type of monitoring (e.g., self-reporting, drive by) Site inspection

Frequency Semi-annual

Responsible party/agency Reichold Chemical

Contact	Name	Title	Date	Phone no.
	Scott Miller	Clean Sites Environmental Services	2/28 /2009	____

Reporting is up-to-date ☐ Yes ☐ No ☐ N/A

Reports are verified by the lead agency ☐ Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met ☐ Yes ☐ No ☐ N/A

Violations have been reported ☐ Yes ☐ No ☐ N/A

Other problems or suggestions: ☐ Report attached

____

2. **Adequacy** ☐ ICs are adequate ☒ ICs are inadequate ☐ N/A

Remarks: ICs are needed

D. General

1. **Vandalism/trespassing** ☐ Location shown on site map ☒ No vandalism evident

Remarks: Site manager reports that trespassing is a recurring problem. Trespassers are believed to include people accessing the pond to fish and/or swim and children who play on the large grassy areas.

2. **Land use changes on site** ☒ N/A

Remarks: There are no plans to change the current on-site land use.

3. **Land use changes off site** ☒ N/A

Remarks: There are no plans to change the current off-site land use.

VI. GENERAL SITE CONDITIONS

A. Roads ☒ Applicable ☐ N/A

1. Roads damaged ☐ Location shown on site map ☒ Roads adequate ☐ N/A

Remarks: ____

B. Other Site Conditions

Remarks: ____

VII. LANDFILL COVERS ☒ Applicable ☐ N/A

A. Landfill Surface

1. **Settlement** (Low spots) ☐ Location shown on site map ☒ Settlement not evident

Arial extent ____ Depth ____

Remarks: ____

2. **Cracks** ☐ Location shown on site map ☒ Cracking not evident

Lengths ____ Widths ____ Depths ____

Remarks: ____

3. **Erosion** ☐ Location shown on site map ☒ Erosion not evident

Arial extent ____ Depth ____

Remarks: ____

4. **Holes** ☐ Location shown on site map ☒ Holes not evident

Arial extent ____ Depth ____

Remarks: ____

5.	**Vegetative Cover**	☒ Grass	☒ Cover properly established
	☐ No signs of stress	☐ Trees/Shrubs (indicate size and locations on a diagram)	
	Remarks: _____		
6.	**Alternative Cover** (armored rock, concrete, etc.)		☒ N/A
	Remarks: _____		
7.	**Bulges**	☐ Location shown on site map	☒ Bulges not evident
	Arial extent _____		Height _____
	Remarks: _____		
8.	**Wet Areas/Water Damage**	☒ Wet areas/water damage not evident	
	☐ Wet areas	☐ Location shown on site map	Arial extent _____
	☐ Ponding	☐ Location shown on site map	Arial extent _____
	☐ Seeps	☐ Location shown on site map	Arial extent _____
	☐ Soft subgrade	☐ Location shown on site map	Arial extent _____
	Remarks: _____		
9.	**Slope Instability**	☐ Slides	☐ Location shown on site map
	☐ No evidence of slope instability		
	Arial extent _____		
	Remarks: _____		
B. Benches	☐ Applicable	☒ N/A	
	(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)		
1.	**Flows Bypass Bench**	☐ Location shown on site map	☒ N/A or okay
	Remarks: _____		
2.	**Bench Breached**	☐ Location shown on site map	☒ N/A or okay
	Remarks: _____		
3.	**Bench Overtopped**	☐ Location shown on site map	☒ N/A or okay
	Remarks: _____		
C. Letdown Channels	☒ Applicable	☐ N/A	
	(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)		
1.	**Settlement** (Low spots)	☐ Location shown on site map	☒ No evidence of settlement
	Arial extent _____		Depth _____
	Remarks: _____		
2.	**Material Degradation**	☐ Location shown on site map	☒ No evidence of degradation
	Material type_____		Arial extent _____
	Remarks: _____		
3.	**Erosion**	☐ Location shown on site map	☒ No evidence of erosion
	Arial extent _____		Depth _____
	Remarks: _____		
4.	**Undercutting**	☐ Location shown on site map	☒ No evidence of undercutting
	Arial extent _____		Depth _____
	Remarks: _____		
5.	**Obstructions**	Type _____	☒ No obstructions
	☐ Location shown on site map	Arial extent _____	
	Size _____		
	Remarks: _____		
6.	**Excessive Vegetative Growth**	Type _____	
	☒ No evidence of excessive growth		
	☒ Vegetation in channels does not obstruct flow		
	☐ Location shown on site map	Arial extent _____	
	Remarks: _____		
D. Cover Penetrations	☒ Applicable	☐ N/A	

1. **Gas Vents** ☐ Active ☒ Passive
☐ Properly secured/locked ☐ Functioning ☒ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks: _____

2. **Gas Monitoring Probes**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☒ N/A
Remarks: _____

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☒ N/A
Remarks: _____

4. **Extraction Wells Leachate**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☒ N/A
Remarks: _____

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☒ N/A
Remarks: _____

E. Gas Collection and Treatment ☐ Applicable ☒ N/A

1. **Gas Treatment Facilities**
☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
☐ Good condition ☐ Needs Maintenance
Remarks: _____

2. **Gas Collection Wells, Manifolds and Piping**
☐ Good condition ☐ Needs Maintenance
Remarks: _____

3. **Gas Monitoring Facilities** (e.g., gas monitoring of adjacent homes or buildings)
☐ Good condition ☐ Needs Maintenance ☐ N/A
Remarks: _____

F. Cover Drainage Layer ☒ Applicable ☐ N/A

1. **Outlet Pipes Inspected** ☐ Functioning ☒ N/A
Remarks: _____

2. **Outlet Rock Inspected** ☐ Functioning ☒ N/A
Remarks: _____

G. Detention/Sedimentation Ponds ☐ Applicable ☒ N/A

1. **Siltation** Area extent _____ Depth _____ ☐ N/A
☐ Siltation not evident
Remarks: _____

2. **Erosion** Area extent _____ Depth _____
☐ Erosion not evident
Remarks: _____

3. **Outlet Works** ☐ Functioning ☐ N/A
Remarks: _____

4. **Dam** ☐ Functioning ☐ N/A
Remarks: _____

H. Retaining Walls ☐ Applicable ☒ N/A

1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
Horizontal displacement _____ Vertical displacement _____
Rotational displacement _____
Remarks: _____

2. **Degradation** ☐ Location shown on site map ☐ Degradation not evident
Remarks: _____

I. Perimeter Ditches/Off-Site Discharge ☐ Applicable ☒ N/A

1.	**Siltation**	☐ Location shown on site map	☐ Siltation not evident
	Area extent _____		Depth _____
	Remarks: _____		
2.	**Vegetative Growth**	☐ Location shown on site map	☐ N/A
	☐ Vegetation does not impede flow		
	Area extent _____		Type _____
	Remarks: _____		
3.	**Erosion**	☐ Location shown on site map	☐ Erosion not evident
	Area extent _____		Depth _____
	Remarks: _____		
4.	**Discharge Structure**	☐ Functioning	☐ N/A
	Remarks: _____		
VIII. VERTICAL BARRIER WALLS		☐ Applicable	☒ N/A
1.	**Settlement**	☐ Location shown on site map	☐ Settlement not evident
	Area extent _____		Depth _____
	Remarks: _____		
2.	**Performance Monitoring**	Type of monitoring _____	
	☐ Performance not monitored		
	Frequency _____		☐ Evidence of breaching
	Head differential _____		
	Remarks: _____		
IX. GROUND WATER/SURFACE WATER REMEDIES		☐ Applicable	☒ N/A
A. Ground water Extraction Wells, Pumps, and Pipelines		☐ Applicable	☒ N/A
1.	**Pumps, Wellhead Plumbing, and Electrical**		
	☐ Good condition	☐ All required wells properly operating	☐ Needs Maintenance ☐ N/A
	Remarks: _____		
2.	**Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**		
	☐ Good condition	☐ Needs Maintenance	
	Remarks: _____		
3.	**Spare Parts and Equipment**		
	☐ Readily available	☐ Good condition	☐ Requires upgrade ☐ Needs to be provided
	Remarks: _____		
B. Surface Water Collection Structures, Pumps, and Pipelines		☒ Applicable	☐ N/A
1.	**Collection Structures, Pumps, and Electrical**		
	☒ Good condition	☐ Needs Maintenance	
	Remarks: _____		
2.	**Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**		
	☒ Good condition	☐ Needs Maintenance	
	Remarks: _____		
3.	**Spare Parts and Equipment**		
	☐ Readily available	☐ Good condition	☐ Requires upgrade ☐ Needs to be provided
	Remarks: _____		
C. Treatment System		☐ Applicable	☒ N/A

1. **Treatment Train** (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☐ Air stripping ☐ Carbon adsorbers
☐ Filters _____
☐ Additive (e.g., chelation agent, flocculent) _____
☐ Others _____
☐ Good condition ☐ Needs Maintenance
☐ Sampling ports properly marked and functional
☐ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☐ Quantity of ground water treated annually _____
☐ Quantity of surface water treated annually _____
Remarks: _____

2. **Electrical Enclosures and Panels** (properly rated and functional)
☐ N/A ☐ Good condition ☐ Needs Maintenance
Remarks: _____

3. **Tanks, Vaults, Storage Vessels**
☐ N/A ☐ Good condition ☐ Proper secondary containment ☐ Needs Maintenance
Remarks: _____

4. **Discharge Structure and Appurtenances**
☐ N/A ☐ Good condition ☐ Needs Maintenance
Remarks: _____

5. **Treatment Building(s)**
☐ N/A ☐ Good condition (esp. roof and doorways) ☐ Needs repair
☒ Chemicals and equipment properly stored
Remarks: _____

6. **Monitoring Wells** (pump and treatment remedy)
☐ Properly secured/locked ☒ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks: _____

D. Monitoring Data

1. **Monitoring Data**
☒ Is routinely submitted on time ☒ Is of acceptable quality

2. **Monitoring data suggests:**
☒ Ground water plume is effectively contained ☐ Contaminant concentrations are declining

E. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
☐ Properly secured/locked ☒ Functioning ☒ Routinely sampled ☐ Good condition
☒ All required wells located ☒ Needs Maintenance ☐ N/A
Remarks: Wells were rusted and not clearly labelled. Two wells were not properly secured.

X. OTHER REMEDIES

If there are remedies applied at the site and not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

The remedy appears to be functioning as designed.

B. Adequacy of O&M

	O&M appears to be performing as intended.
C.	**Early Indicators of Potential Remedy Problems**
	No early indicators of potential remedy problems were identified in this review.
D.	**Opportunities for Optimization**
	No opportunities for optimization were identified in this review.

Appendix E: Photographs from Site Inspection Visit

Sign identifying the Site as an EPA Superfund site.

Gas venting system vent and hole in the northern perimeter fence.

South-facing view of pond and inner fencing.

Southwest-facing view of the vegetated cap.

Leachate collection system riser and manhole (right).

Southwest corner of inner fence with access at fence base. The fence has since been secured.

Warning sign on perimeter fence.

Rusted monitoring well without functioning lock. The well has since been secured.

Appendix F

Updated Site Fact Sheet

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303-8960

FACT SHEET: Update on the Status of Pioneer Sand Company Site

Pensacola, Florida **March 2009**

Introduction

The purpose of this Fact Sheet is to introduce the reader to the Pioneer Sand Company, a Site regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund.

The Pioneer Sand Company Site is located near the town of Belleview, approximately five miles northwest of Pensacola, Florida. The Site is approximately 0.3 of a mile west of Highway 173 (the Blue Angel Highway) and along Saufley Field Road. The Site is south of Saufley Field Road.

Site History

The 11-acre Pioneer Sand Company Site is an inactive quarry licensed in 1974 to receive shredded auto parts, construction debris, and various industrial sludges. Between 1974 and 1978, phenols and resin compounds were disposed on the site by Newport Industries, currently Reichold Chemical. Domestic and industrial wastes, including plating sludges, were received from the Pensacola Naval Air Station. Approximately 75 percent of the Site is an excavation pit, while the remaining 25 percent is the fill area where wastes were deposited.

In 1981, the Florida Department of Environmental Regulations (FDER) (now the Florida Department of Environmental Protection) did not renew the disposal permit and ordered the dumping to cease. Subsequent environmental sampling detected contamination in the soil. A monitoring well installed by the company and one of the on-site disposal ponds were also found to be contaminated. Sampling of nearby private wells indicated no off-site groundwater contamination.

Based on the observed contamination, the Site was listed on the National Priorities List (NPL) in 1983 and underwent numerous investigations and cleanup in the late 1980s and early 1990s. The site was deleted from the NPL on February 8, 1993.

Summary of Site Cleanup

The following is a list of the main cleanup actions implemented and completed in the early 1990s:

- Stabilization of approximately 7,547 cubic yards of sludge;
- Construction of a leachate collection trench;
- Installation of a four acre synthetic cover system;
- Installation of gas venting and collection system;
- Implementation of a groundwater monitoring system.

Pursuant to Section 121 of CERCLA, EPA is required to conduct a five-year review of remedies which leave waste in-place. The objective of such a review is to ensure that the selected remedy continues to protect human health and the environment. EPA completed the second five-year for the Pioneer Sand Company Site on November 16, 2004. The five-year review process includes review of data and information, inspection of the site and community interviews. These activities will assist in the determination of whether the selected remedy remains protective of human health and the environment. The conclusion was that the selected remedy is protective of human health and the environment. The EPA is currently performing a five year review on the site. It is scheduled to be completed in the 4Q of CY 2009.

Current Site Status

The Site currently consists of the following:

- A wooded area surrounding a pond (i.e., the excavation pit)
- Capped landfill and associated leachate trench, monitoring wells and gas vents.

The Site is fenced with informational signs. Administratively, the Site is in the phase termed Operation & Maintenance (O&M). Operation and Maintenance includes groundwater and gas monitoring. A Conservation Easement restricts the types of activities that can be implemented at the Site (e.g., no construction of roads, residences, businesses; no disposal of debris, waste, cars; no use of the property for crops, holding domestic animals; etc.).

Site Access

Although waste stabilization and landfill capping has been effective in protecting human health and the environment from site contamination, the Site boundaries should be honored. EPA requests that the fence and no trespassing/warning signs be respected and people remain off the Site. Should you have any questions please contact one of the following:

Contacts

Peter Thorpe - EPA Region 4
Remedial Project Manager
61 Forsyth Street
Atlanta Georgia 30303
(404) 562-9688 or (800) 435-9234
Thorpe.Peter@epa.gov

LaTonya Spencer - EPA Region 4
Community Involvement Coordinator
61 Forsyth Street
Atlanta Georgia 30303
(404) 562-8463 or (800) 564-7577
Spencer.Latonya@epa.gov

Scott R. Miller - Site Manager
Clean Sites
46161 Westlake Drive, Suite 230-B
Potomac Falls, Virginia 20165
(703) 519-2142

Local Repository

West Florida Regional Library
200 West Gregory Street
Pensacola, Florida 32501-4878
(850) 436-5060

Appendix G

Amended Conservation Easement

AMENDED CONSERVATION EASEMENT

STATE OF FLORIDA

COUNTY OF ESCAMBIA

This instrument is entered by WALTER DUGGER and CELIA DUGGER, husband and wife (hereinafter referred to as the "Grantors"), in favor of the UNITED STATES OF AMERICA (hereinafter referred to as the "Grantee").

1. WHEREAS, the Grantors are the owners of certain real property (hereinafter referred to as the "Site") located in Escambia County, Florida, which is more fully described as follows:

> Lots 6, 7, and 8 of Lot 3 Section 2, Township 2 South, Range 31 West according to survey of Stephen Lee dated July 3, 1909, said survey being recorded in deed book 64 at page 365 of the public records of Escambia County, Florida, and except the South 10 acres of Lots 6, 7, and 8 of Lot 3, Section 2, Township 2 South, Range 31 West, according to survey of Stephen Lee of July 3, 1909, and except the North 6-2/3 acres of Lot 6 of Lot 3, Section 2, Township 2 South, Range 31 West, according to survey of Stephen Lee of July 3, 1909, containing 14 acres, more or less, and to include a right of way into this property which is described as commencing at the Northwest corner of Lot 2 of Lot 3, Section 2 Township 2 South, Range 31 West, as recorded in Deed Book 64 at page 365 of the public records of Escambia County, Florida; thence East along the North line of said Lot 2, a distance of 541 feet to a point of beginning of the right of way hereinafter described, thence South along a fence a distance of 484 feet, thence East for 27 feet; thence South 161 feet to the Northwest corner of the tract above described; thence East for a distance of

& 60
7-23-92

15 feet along the North line of said tract; thence North for a distance of 176 feet; thence West for a distance of 27 feet; thence North for a distance of 469 feet, thence West for a distance of 15 feet to the point of beginning, this being the right of way into said property.

2. WHEREAS, a Consent Decree has been entered in the case of United States of America vs. Reichhold Chemical, Inc., et al., Civil Action No. 88-30168WS, United States District Court, Northern District of Florida, Pensacola Division, (hereinafter "the Consent Decree"), for the implementation of the remedial design and remedial action (hereinafter the "RD/RA") at the Site pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601 et seq., as amended (hereinafter "CERCLA");

3. WHEREAS, pursuant to the Consent Decree certain settling defendants agreed to perform the RD/RA at the Site;

4. WHEREAS, the RD/RA includes the granting of a perpetual conservation easement for the Site in accord with Section 104(j) of CERCLA;

5. WHEREAS, the Grantors have agreed to grant a perpetual conservation easement in favor of the Grantee on the Site on the terms set forth herein;

6. WHEREAS, the Grantors previously executed a Conservation Easement that was filed in the land records of Escambia County and such document has been revised to create this Amended Conservation Easement;

7. WHEREFORE, the Grantors hereby grant to the Grantee, and its assigns, a perpetual conservation easement on the Site. Such easement is granted pursuant to Section 104(j) of CERCLA and in accordance with the provisions of Section 704.06, Florida Statutes (1990). The restrictions and covenants of this easement constitute a perpetual servitude on the property and run with the property. The Grantee reserves the rights obtained through this easement for itself, and for the State of Florida upon such time as the Grantee assigns the easement to the State of Florida subject to and in accordance with Section 104(j) of CERCLA and the State of Florida accepts such assignment. This easement is subordinate to the reservations set forth in paragraphs 6 and 7 below.

8. The purpose of this easement is to assure the integrity and maintenance of the remedial action activities implemented at the Site in accordance with the Consent Decree and the Record of Decision, and the protection of public health and the environment. The Grantors, and their respective heirs, successors and assigns, covenant with the Grantee and its assigns not to conduct any of the following activities at or on the Site:

a. Drilling, construction, disturbance or other activities which would compromise the integrity of the cover, the fence, monitoring wells, gas vents, or any other component of the remedy, or the function of any operating, monitoring, or maintenance activity.

b. Construction of roads or excavation or drilling/placement of wells.

c. Construction or placement of residences, trailers, schools, businesses, churches, warehouses, storage facilities or any other structures whether temporary or permanent.

d. Use for crops, vegetation, burning, planting, harvesting, other agricultural or forestry uses, pasture or holding of domestic animals.

e. Storage or disposal of construction debris, sewage, solid waste, hazardous waste, garbage, used cars, used trucks, used tires, used automobile parts, and other scrap pr junk materials.

f. Alterations of storm water drainage conditions on to, away from, or adjacent to the cover.

g. Activities which would increase erosion or the instability of the pit excavation side walls adjacent to the cover.

h. All other activities as may be restricted pursuant to Section 704.06, Florida Statutes (1990).

9. The Grantee reserves, on behalf of itself and its assigns, and their authorized representatives including contractors, the right to manage the Site, including but not limited to the following activities:

a. The right to ingress and egress to conduct monitoring and easement enforcement activities.

b. The right of access to the premises for the purpose of studying, sampling, testing, examining, or performing of certain design, engineering and construction work, and to undertake and complete scientific work and remedial actions as necessary or desirable to control, process, remove as necessary, treat and rectify the conditions at the premises which may be potentially dangerous to the public health or the environment.

c. Any other rights necessary to implement, control or maintain the integrity of the remedial action pursuant to sections 104 or 106 of CERCLA.

10. Notwithstanding any of the provisions of this Conservation Easement, the United States and the State of Florida retain all of their access authorities and rights under CERCLA, the Resource Conservation and Recovery Act (RCRA), and any other applicable statutes or regulations.

11. In accordance with Section 104(j)(2) of CERCLA, the United States will transfer this easement to the State of Florida upon completion of the remedial action. As provided in Section 104(c)(6) of CERCLA, treatment and containment of all leachate from the Site shall be considered the remedial action. The Grantors or its assigns agree to provide the State of Florida with such title, boundary and baseline information as may be reasonably required prior to the transfer of the easement. Such information shall include, but not be limited to, the items listed on Attachment 1. As provided in Section

104(j)(3), the State of Florida shall not be liable under CERCLA as a result of acquiring this easement.

12. Without limiting any other rights granted pursuant to this easement, the Grantors hereby grant the United States and its assigns access at all times to the Site for the purposes of assuring compliance with this easement and of conducting any activities authorized by the Consent Decree, or otherwise authorized by CERCLA, including, but not limited to, the activities set forth in Paragraph 6 above. Grantors acknowledge that in addition to the rights conveyed under this Conservation Easement, the State of Florida, pursuant to Section 704.06, Florida Statutes (1991), shall have the right to enter the Site in a reasonable manner and at all reasonable times to assure compliance with the terms of the easement.

13. This easement shall be binding upon the Grantors and upon its respective heirs, successors and assigns. The Grantors covenant to warrant and defend for the Grantee, or its assigns, the quiet and peaceable use and enjoyment of the Site against all claims and demands.

14. Grantors and their successors and assigns, agree to pay in perpetuity any real estate taxes or assessments levied by competent authorities on the Site.

15. The terms and conditions of this Conservation Easement may be enforced by the Grantee and its assigns by injunctive relief and other appropriate available remedies. Grantors consent that, upon the transfer of the easement to the

State of Florida, venue for such enforcement actions shall lie exclusively in the Circuit Court, in and for Escambia County, Florida. In any enforcement action in which the Grantee or its assigns prevail, Grantee or its assigns shall be entitled to recover reasonable attorney's fees and costs in the trial and appellate courts and in addition to the cost of restoring the land to the condition existing at the time of execution of this Conservation Easement. Any forbearance on behalf of the Grantee to exercise its rights in the event of the failure of Grantors to comply with the provisions of this Conservation Easement shall not be deemed or construed to be a waiver of the Grantee's rights hereunder in the event of any subsequent failure of the Grantors to comply.

IN WITNESS WHEREOF, Grantors have caused the present to be signed, sealed and delivered on this 17 day of July, 1992.

Signed, sealed and
delivered in our presence
of

WITNESS

WITNESS

GRANTOR

GRANTOR

State of Florida

County of Escambia

ACKNOWLEDGEMENT

The foregoing instrument was acknowledge before me this 17 day of July, 1992 by WALTER DUGGER and CELIA DUGGER, his wife, who are personally known to me or who have produced _____ as identification and who did (did not) take an oath.

Notary Public

My Commission Expires: 3-4-95

TAL-9622

ATTACHMENT 1

CONSERVATION EASEMENT TITLE*
INFORMATION REQUIRED BY FDER

Title Information Options

I.

A. Affidavit of lien status;

B. Subordination/release/joinder agreements, if liens on the property exist;

C. Title commitment prior to issuance of insurance; with

1. Explanation of encumbrances;
2. Map of any other easement.

[OR]

II.

A. Affidavit of lien status;

B. Subordinate/release/joinder agreements, if liens on the property exist;

C. Attorney's title opinion; with:

1. Explanation of encumbrances;
2. Map of any other easement.

Boundary Information Options

I.

A. Survey of area showing all existing easements and encumbrances, with monumentation;

B. Accurate drawing of easement property (not necessarily metes & bounds); and

C. Legal description of easement property (with acreage).

[OR]

II.

A. Survey with monumentation and posting of land.

B. Accurate drawing of easement property (not necessarily metes & bounds); and

C. Legal description of easement property (with acreage).

Baseline Data Options

I.

A. Baseline data report for large parcels completed by trained field biologist who has visited the site; and

B. Location map; and

C. Aerial photograph with approximate boundary of easement indicated; and

D. On-site photographs of area.

"Conservation Easement" and Physical Information

I.

A. Affidavit of Lien status;

B. Subordination/release/joinder agreements, if liens on the property exist; and

C. Updated title certificate; or

D. Ownership proof in the form of a deed may be appropriate with very small parcels.

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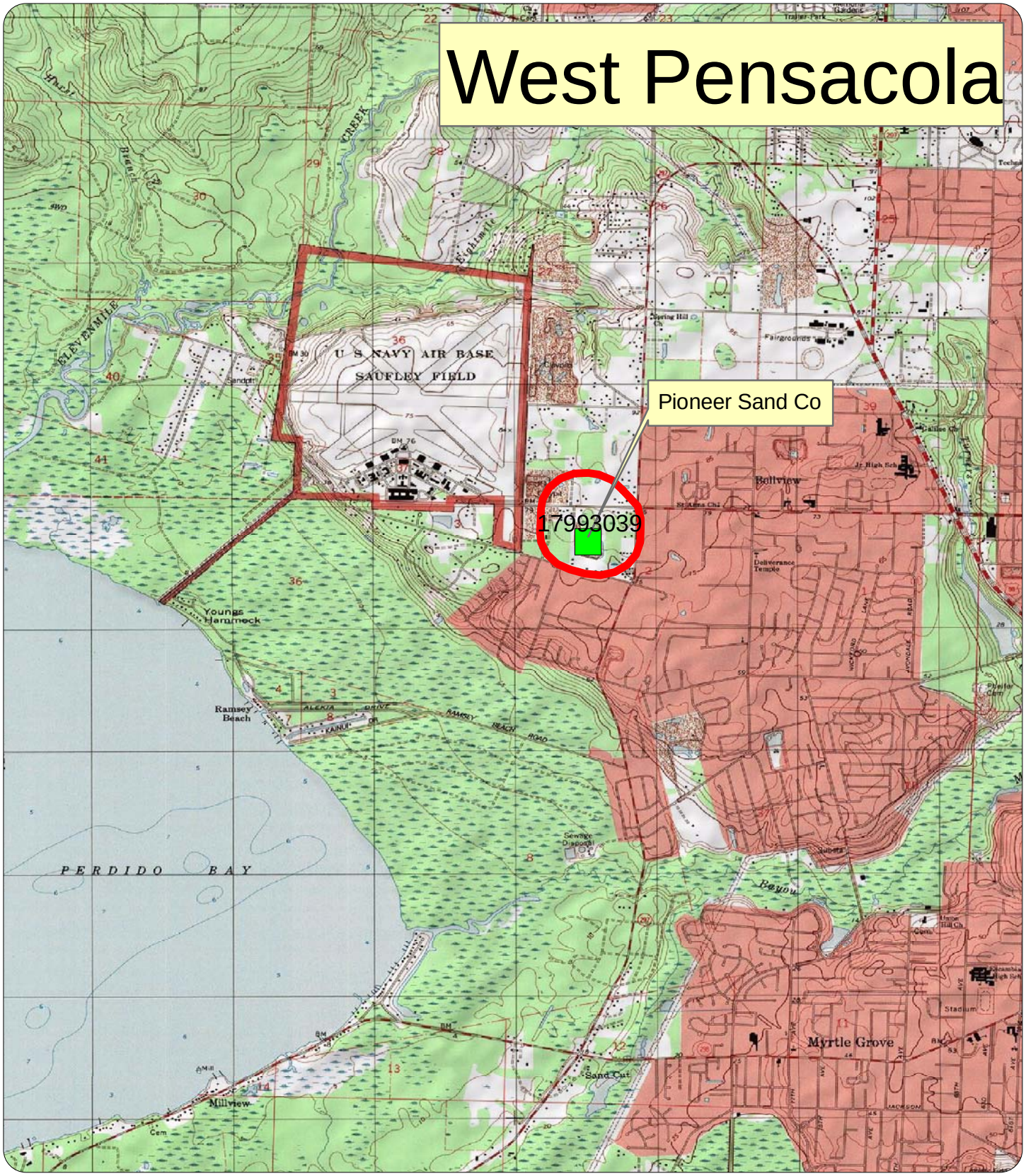
*If a plat of the development is being recorded, the title information may be required to be incorporated into the plat after all materials have been reviewed and approved by the Department.

TAL-9847

Appendix H

Florida Ground Water Delineation Area



NORTH

Figure 1
Florida Ground Water
Delineated Area Map

Pioneer Sand Co. Superfund Site
Warrington, Escambia County, FL

CHAPTER 62-524 NEW POTABLE WATER WELL PERMITTING IN DELINEATED AREAS

62-524.200 Definitions for New Potable Water Well Permitting in Delineated Areas.

(1) "Available Potable Water System" means, for the purpose of this chapter, a public water system, as defined in Rule 62-550.200, F.A.C., which has sufficient capacity and is legally able to serve specific additional connections.

(2) "Delineated Area" means a surface area identified pursuant to Rule 62-524.420, F.A.C., within which ground water contamination is known to exist or which encompasses vulnerable areas or areas in which the Department provides a subsidy for restoration or replacement of contaminated drinking water supplies.

(3) "Ground Water Contamination" means, for the purpose of this chapter, the presence outside an applicable zone of discharge in Class F-I, G-I, or G-II ground water of one or more substances in quantities which exceed a primary drinking water maximum contaminant level as set forth in Chapter 62-550, F.A.C., present an imminent hazard pursuant to Section 403.855, F.S., or for which the State Health Officer in the Department of Health and Rehabilitative Services, based upon a written request from the Department, has advised the Department in writing is present in deleterious amounts. The determination, under this section, of the existence of ground water contamination based upon the presence of deleterious amounts shall not constitute the establishment of a standard under either Chapter 62-520 or Chapter 62-550, F.A.C. If the concentration of any primary drinking water standard in the natural background quality of the ground water is greater than the stated maximum contaminant level, the representative background value shall be the prevailing standard.

(4) "New Potable Water Well" means any excavation that is drilled or bored, or converted from non-potable water use, after delineation in an area delineated pursuant to Rule 62-524.400, F.A.C., when the intended use of such excavation is for the location and acquisition of ground water which supplies water for human consumption. This does not include repair of an existing potable water well.

(5) "Vulnerable area" is an area in which research or monitoring data indicate that ground water is vulnerable to nitrate contamination because of the presence of potential sources of nitrate contamination, and because of land surface and subsurface characteristics.

Specific Authority 373.309, 403.061, 403.062 FS. Law Implemented 373.309, 376.307 FS. History–New 5-16-89, Amended 3-3-92, Formerly 17-524.200, Amended 2-7-95.

62-524.420 Procedures for Delineation of Areas for Application of New Potable Water Well Permitting.

(1) Based upon available data, the Department shall identify and locate, for the purpose of application of the requirements of this chapter, areas within which ground water contamination is known to exist or which encompasses vulnerable areas or areas in which the Department provides a subsidy for restoration or replacement of contaminated drinking water supplies.

(2) The Department shall rely on data from samples collected and analyzed using Department approved quality assurance/ quality control procedures. Where quality assurance/quality control procedures are not documented the Department shall evaluate the data for completeness and accuracy in order to determine acceptability for use in delineation under this chapter.

(3) Sources of ground water data to be used for delineation of areas under this chapter shall include:

(a) Local, state, and federal agencies.

(b) Water management districts.

(c) Department programs.

(4) For wells, sites, or sources with known ground water contamination, where insufficient site specific ground water data exist for determination of contaminant plume boundaries, a delineated area shall be established in the following manner:

(a) A 1000-foot setback from the well, site or source boundary.

(b) Where data from the distribution or movement of ground water contamination indicate that a 1000-foot setback is insufficient the Department shall establish an alternate setback based on such data.

(5) For sites with a history of application of ethylene dibromide where insufficient site specific ground water data exist for determination of contaminant plume boundaries, the Department shall delineate an area which encompasses the area of application and a setback, based on data on the distribution of ethylene dibromide contamination, or a 1000-foot setback, whichever is larger.

(6) For sites where a hydrogeologic investigation of ground water has been conducted and the nature and extent of a contaminant plume is documented and sufficient data exist for predictive ground water modelling, the Department shall delineate an area which encompasses the ground water contamination and its predicted movement for the next two years.

(7) Where the source or site which resulted in an area being delineated is the subject of remediation for ground water clean-up, the effect of this remediation shall be considered by the Department in subsequent delineation updates.

(8) For areas in which the Department provides a subsidy for restoration or replacement of contaminated drinking water supplies through extending existing water lines or developing new water supply systems under Section 376.307(4)(b)3. and (c), F.S., the Department shall delineate an area which encompasses such extended water lines or water lines constructed as part of a new water system and a 1000-foot setback.

(9) For areas in which the Department determines that ground water is vulnerable to contamination with nitrate, the Department shall delineate such vulnerable areas. The Department shall determine where vulnerable areas exist by using the following information when available:

(a) Physical properties of soils

(b) Vadose zone media

(c) Hydrogeologic characteristics of aquifer systems

(d) Depth to ground water

(e) Recharge

(f) Karst features

(g) Topography

(h) Presence of Class G-II ground water or other potable ground water with less than 10,000 mg/L total dissolved solids

(i) Water quality data; and

(j) Nitrogen application or loading rates for potential sources of nitrate contamination.

(10) In delineating areas under this rule, the Department shall coordinate with other affected agencies, particularly those receiving delegation under Rule 62-524.800, F.A.C., in the technical aspects of delineation.

(11) The Department shall present delineated areas to the Environmental Regulation Commission for approval at rulemaking public hearings duly noticed as required by Section 120.54, F.S.

(a) At such public hearings the Commission, when approving delineated areas, shall consider the known ground water contamination and its projected movement until the next delineation update.

(b) If requested by the Commission, the Department shall present the data, predictive ground water modelling, and mapping procedure used to delineate each area presented to the Commission.

(c) The Commission shall consider any other competent evidence regarding delineated areas.

(d) Approval by the Commission of a delineated area shall result in that area being included on maps or other means of location and description prepared by the Department as described in subsections (12) and (13). Each approved map or other means of location and description shall contain an effective date and shall be made available as provided in subsections (12) and (13).

(12) To facilitate the permitting process, the Department shall provide maps which indicate all sections which contain any portion of a delineated area. Prior to construction of a new potable water well within a mapped section, the potential applicant should contact the appropriate permitting authority which shall determine if the proposed well is within a delineated area. Such maps or other information shall be made available by the Department to interested persons upon written request and upon payment of appropriate costs.

(13) Following each update, the Department shall make available to water management districts, regional planning councils, the Department of Health and Rehabilitative Services, and county building and zoning departments, maps or other information on areas for application of the requirements of this chapter.

(a) Where maps are provided, they shall be of an appropriate scale as determined by the Department based on the accuracy and precision of the data.

(b) For each delineated area the Department shall provide a list of those contaminants to be tested pursuant to Rule 62-524.600, F.A.C., and shall specify any casing or solvent bond restrictions.

(14) Maps or other information on areas for application of the requirements of this chapter shall be periodically updated by the Department. Additional areas, or revision to existing areas, for application of the requirements of this chapter may be delineated at any time as technical information becomes available.

Specific Authority 373.309, 403.061, 403.062 FS. Law Implemented 373.309, 376.307 FS. History–New 5-16-89, Amended 3-25-90, 7-4-91, 5-6-93, Formerly 17-524.420, Amended 2-7-95, 12-9-96.

62-524.430 Maps Containing Delineated Areas.

The following maps, which are incorporated herein by reference, show surface areas, delineated pursuant to Rule 62-524.420, F.A.C. Each map listed contains a month and year which corresponds to the date the Department prepared the most recent map showing any portion of a delineated area. Copies of these maps may be examined at the Department of Environmental Protection, Bureau of Information Systems, or copies may be obtained, upon receipt of reproduction and other appropriate costs, from the Department of Environmental Protection, Bureau of Information Systems, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

(1)	ALACHUA COUNTY:	
	Archer	11/94
	Gainesville East	11/94
	High Springs	11/94
	High Springs SW	11/94
	Micanopy	11/94
	Monteocha	11/94
	Newberry	11/94
	Orange Heights	11/94
	Waters Lake	11/94
(2)	BREVARD COUNTY:	
	Melbourne East	11/94
(3)	BROWARD COUNTY:	
	Cooper City	11/94
	Fort Lauderdale North	11/94
	Fort Lauderdale South	11/94
	North Miami	11/94
	Port Everglades	11/94
(4)	CITRUS:	
	Crystal River	11/94
	Homosassa	11/94
(5)	COLUMBIA:	
	Columbia	11/94
	Fort White	11/94
	Lake City West	11/94
	Mikesville	11/94
(6)	DADE COUNTY:	
	Hialeah	11/94
	North Miami	11/94
	South Miami	11/94
(7)	DESOTO:	
	Arcadia	11/94
(8)	DUVAL COUNTY:	
	Baldwin	11/94
	Jacksonville	11/94
	Jacksonville Heights	11/94
	Marietta	11/94
(9)	ESCAMBIA COUNTY:	
	Cantonment	11/94
	Pensacola	11/94
	Seminole (AL)	11/94
	West Pensacola	11/94
(10)	GILCHRIST:	
	High Springs SW	11/94
	Waters Lake	11/94
(11)	GLADES COUNTY:	
	Moore Haven	11/94
(12)	HAMILTON:	

	Ellaville	11/94
	Fort Union	11/94
(13)	HARDEE:	
	Griffins Corner	11/94
(14)	HERNANDO:	
	Masaryktown	11/94
	Port Richey NE	11/94
	Weekiwachee Springs	11/94
(15)	HIGHLANDS COUNTY:	
	Avon Park	11/94
	Childs	11/94
	Crewsville	11/94
	Frostproof	11/94
	Lake Arbuckle	11/94
	Lake Arbuckle SW	11/94
	Lake June In Winter	11/94
	Lake Placid	11/94
	Sebring	11/94
	Venus SW	11/94
(16)	HILLSBOROUGH COUNTY:	
	Brandon	11/94
	Citrus Park	11/94
	Dover	11/94
	Ft. Lonesome	11/94
	Lithia	11/94
	Lutz	11/94
	Plant City West	11/94
	Sulphur Springs	11/94
	Tampa	11/94
	Thonotosassa	11/94
	Wimauma	11/94
(17)	INDIAN RIVER:	
	Vero Beach	11/94
(18)	JACKSON COUNTY:	
	Alford	11/94
	Bascom	11/94
	Campbellton	11/94
	Cottondale East	11/94
	Cottondale West	11/94
	Cypress	11/94
	Dellwood	11/94
	Fairchild (GA)	11/94
	Graceville	11/94
	Kynesville	11/94
	Malone	11/94
	Marianna	11/94
	Oakdale	11/94
	Grangeburg (AL)	11/94
	Saffold (AL)	11/94
	Sills	11/94
	Sneads	11/94
	Steam Mill (GA)	11/94
(19)	LAKE COUNTY:	
	Astatula	11/94
	Center Hill	11/94
	Clermont East	11/94
	Clermont West	11/94

	Eustis	11/94
	Howey In The Hills	11/94
	Lake Louisa	11/94
	Lake Louisa SW	11/94
	Lake Nellie	11/94
	Leesburg East	11/94
	Mascotte	11/94
	Sorrento	11/94
	Umatilla	11/94
(20)	LEON COUNTY:	
	Tallahassee	11/94
(21)	LEVY:	
	Morriston	11/94
(22)	MADISON:	
	Cherry Lake	11/94
	Madison	11/94
	Nankin (GA)	11/94
	Pinetta	11/94
(23)	MANATEE:	
	Ft. Lonesome	11/94
	Wimauma	11/94
(24)	MARION COUNTY:	
	Belleview	11/94
Lady	Lake	11/94
	Lake Weir	11/94
	Ocala East	11/94
	Ocala West	11/94
	Oxford	11/94
(25)	MARTIN COUNTY:	
	Indiantown	11/94
	Okeechobee 4 SE	11/94
(26)	ORANGE COUNTY:	
	Apopka	11/94
	Astatula	11/94
	Clermont East	11/94
	Eustis	11/94
	Forest City	11/94
	Lake Jessamine	11/94
	Lake Louisa	11/94
	Orlando East	11/94
	Orlando West	11/94
	Sorrento	11/94
	Windermere	11/94
	Winter Garden	11/94
(27)	OSCEOLA:	
	Ashton	11/94
	Intercession City	11/94
	Lake Louisa SW	11/94
	Narcoossee	11/94
(28)	PASCO:	
	Lutz	11/94
(29)	PINELLAS:	
	Elfers	11/94
(30)	POLK COUNTY:	
	Alturas	11/94
	Auburndale	11/94
	Babson Park	11/94
	Bartow	11/94
	Bereah	11/94

	Davenport	11/94
	Dundee	11/94
	Eloise	11/94
	Frostproof	11/94
	Gum Lake	11/94
	Hesperides	11/94
	Homeland	11/94
	Intercession City	11/94
	Lake Arbuckle	11/94
	Lake Louisa SW	11/94
	Lake Wales	11/94
	Lake Weohyakapka	11/94
	Lakeland	11/94
	Mulberry	11/94
	Nichols	11/94
	Plant City East	11/94
	Polk City	11/94
	Providence	11/94
	Socrum	11/94
	Winter Haven	11/94
(31)	PUTNAM:	
	Baywood	11/94
(32)	SANTA ROSA:	
	Milton South	11/94
	Pace	11/94
(33)	SEMINOLE COUNTY:	
	Aurantia	11/94
	Bithlo	11/94
	Casselberry	11/94
	Forest City	11/94
	Geneva	11/94
	Sanford	11/94
	Titusville SW	11/94
(34)	ST. JOHNS COUNTY:	
	Picolata	5/00
(35)	ST. LUCIE:	
	Fort Pierce NW	11/94
	Okeechobee 1 NE	11/94
(36)	SUMTER:	
	Bushnell	11/94
	Webster	11/94
(37)	SUWANNEE:	
	Dowling Park	11/94
	Fort Union	11/94
	Hildreth	11/94
	Hillcoat	11/94
	Live Oak East	11/94
	O'Brien	11/94
(38)	VOLUSIA COUNTY:	
	Aurantia	11/94
	De Land	11/94
	Geneva	11/94
	Orange City	11/94
	Titusville SW	11/94

Specific Authority 373.309, 403.061 FS. Law Implemented 373.309 FS. History–New 3-25-90, Amended 10-4-90, 7-4-91, Formerly 17-524.430, Amended 2-7-95, 6-27-00.

62-524.550 Well Construction Requirements for New Potable Water Well Permitting in Delineated Areas.

(1) New potable water wells shall comply with the minimum construction standards contained in Rule 62-532.500, F.A.C. Additional requirements may be assigned by the permitting authority relative to depth restrictions, location of screened or open hole interval, and length of casing where warranted by local specific information.

(2) Methods for constructing new potable water wells shall be limited to rotary drilling, boring, or other method specifically approved by the permitting authority pursuant to Rule 62-524.700(1), F.A.C., which meets the water well construction criteria in Rule 62-532.500, F.A.C., except as required below.

(a) Well casing and liner pipe shall be new, free of breaks, corrosion and dents, straight and true, and not out of round. Welded or seamless black or galvanized steel pipe or casing, or stainless steel pipe or casing, or approved types of nonmetallic pipe shall be used for well casing or liner pipe.

(b) Solvent-bonded couplings shall be prohibited in areas with known ground water contamination which includes solvent components.

(c) To prevent the interchange of water and loss of artesian pressure, contaminated, unconfined ground water intervals shall be sealed off prior to drilling through the underlying confining interval. Uncontaminated, unconfined ground water intervals shall be sealed off or otherwise protected prior to drilling into deeper, contaminated ground waters.

(d) For any well casing installed in a bore hole, the annular space shall be filled from bottom to top with not less than a nominal two inch thickness of neat cement grout.

(e) A concrete pad measuring three feet by three feet by four inches shall be constructed around the elevated portion of the casing so that the casing is centered in the pad to prevent soil erosion and seepage of surface contamination into the annular space.

(f) A minimum elevation of one foot of casing above land surface shall be required.

(g) A raw water tap shall be provided to allow sampling of the well before exposure to storage or treatment.

(h) The well casing shall be visibly and permanently marked above the land surface with the latitude and longitude and the permit number issued by the permitting authority for that well.

(i) To the extent practical, potable water wells shall be located outside an area delineated under Rule 62-524.420, F.A.C.

(j) Where the source of contamination and the direction of ground water flow are known, in an area delineated under Rule 62-524.420, F.A.C., to the extent practical, potable water wells shall be located upgradient of the source.

(k) New potable water wells shall be located on ground least subject to inundation.

(l) Any new potable water well constructed within a delineated area that does not meet the construction standards of this section shall be abandoned and plugged in accordance with Rule 62-532.500, F.A.C., and applicable water management district rules.

Specific Authority 373.309, 403.061, 403.062 FS. Law Implemented 373.309 FS. History–New 5-16-89, Amended 3-25-90, 3-3-92, Formerly 17-524.550, Amended 12-9-96.

62-524.600 Water Quality Testing for New Potable Water Well Delineated Areas.

(1) New potable water wells shall be tested using methods as specified in Rule 62-524.420, F.A.C., for the presence in the untreated water of the ground water contamination which resulted in the delineation.

(2) The Department shall accept only test results obtained from water samples collected and analyzed by the Department of Health and Rehabilitative Services. The well construction permit applicant shall be responsible for the cost of sample collection, shipping, and analysis.

Specific Authority 373.309, 403.061, 403.062 FS. Law Implemented 373.309 FS. History–New 5-16-89, Amended 3-3-92, 5-6-93, Formerly 17-524.600.

62-524.650 Clearing for Use of New Potable Water Wells in Delineated Areas.

(1) If no ground water contamination is found upon testing of a new potable water well in a delineated area pursuant to Rule 62-524.600, F.A.C., the Department of Health and Rehabilitative Services shall be responsible for issuance of a letter of clearance to the well construction permit applicant.

(2) If ground water contamination is found upon testing pursuant to Rule 62-524.600, F.A.C., or other ground water contamination is found, a well shall not be cleared for use without a demonstration, through water quality testing, that a filter or other permanent remedy prevents the users of the well from being exposed through ingestion, inhalation, or dermal absorption, as appropriate for a contaminant, to ground water contamination.

Specific Authority 373.309, 403.061, 403.062 FS. Law Implemented 373.309 FS. History–New 3-3-92, Formerly 17-524.650, Amended 12-9-96.

62-524.700 Permit Requirements for New Potable Water Wells in Delineated Areas.

(1) A construction permit shall be obtained from the appropriate water management district pursuant to Rule 62-524.800, F.A.C., for all new potable water wells prior to installation or conversion. Applicants shall submit a proposed well design with the completed application, and the permit fee, to the permitting authority. Permit application shall be made under existing well

construction permitting programs pursuant to Chapter 62-532, F.A.C., using forms adopted by the permitting authority for this purpose. In addition to the general requirements of this chapter, the permit shall address the following requirements through special conditions:

(a) Well construction including method of construction, depth, location of cased and screened intervals, casing material and grouting.

(b) Any special cleaning requirements for casing or drilling equipment.

(c) Water quality testing.

(d) Unique well identifiers where needed.

(2) Permitting and construction of new potable water wells, except for a well to be used for a public water system as defined in Rule 62-550.200, F.A.C., are prohibited in delineated areas where a distribution line of an available potable water system is within 500 feet of the boundary of the property for which a well construction permit is being sought. Such prohibition applies unless the property owner or applicant obtains documentation from the public water system or the Department's Water Supply Restoration and Replacement Program, and submits such documentation to the permitting entity, which demonstrates either of the following:

(a) That economic factors caused by physical or legal impediments to construction to a distribution line prevent the property owner or permit applicant from obtaining potable water through connection to the distribution line; or

(b) That necessary water distribution line extensions (excluding plumbing and meters) cannot be completed within 30 days of application to the Department for water supply restoration or replacement.

Specific Authority 373.309, 403.061, 403.062 FS. Law Implemented 373.309 FS. History–New 5-16-89, Amended 3-3-92, Formerly 17-524.700, Amended 12-9-96.

62-524.710 Exemption from New Potable Water Well Permitting in Delineated Areas.

Exemption from the requirements of Rule 62-524.700, F.A.C., shall be granted to an applicant by the Department or the permitting authority upon demonstration using hydrogeological, water quality, and other pertinent information that the exemption will not result in the impairment of the intent and purpose of this chapter. Detailed requirements for each exemption shall be negotiated between the permit applicant and the permitting authority on a case by case basis.

Specific Authority 373.309, 403.061, 403.062 FS. Law Implemented 373.309, 373.326 FS. History–New 5-16-89, Formerly 17-524.710.

62-524.720 Fees for New Potable Water Wells in Delineated Areas.

(1) Well construction permit fees for new potable water wells shall be established by rule by each water management district in an amount to recover all their actual costs, but may not exceed $500.

(2) The clearance fee for new potable water wells shall be $50.

(3) All fees collected pursuant to this rule shall be deposited in the delegated entity's appropriate operating account.

Specific Authority 373.309, 403.061, 403.062 FS. Law Implemented 373.309 FS. History–New 5-16-89, Amended 3-3-92, Formerly 17-524.720.

62-524.730 Inspections of New Potable Water Wells in Delineated Areas.

During the construction, repair, conversion from non-potable use, or abandonment of any well subject to permit under this chapter, the Department or the permitting authority may conduct inspections to ensure conformity with the requirements in this chapter. Duly authorized representatives of the Department or the permitting authority may, at any reasonable time, enter property on which a well subject to permit under this chapter is located and inspect said well.

Specific Authority 373.309, 403.061, 403.062 FS. Law Implemented 373.309, 373.319 FS. History–New 5-16-89, Formerly 17-524.730.

62-524.740 Violations and Penalties for New Potable Water Wells in Delineated Areas.

(1) Prohibited Acts.

(a) It shall be a violation of Section 373.309, F.S., and this chapter to construct, convert from non-potable use, or abandon any potable water well, or use for human consumption any well subject to permit under this chapter without having obtained a permit pursuant to Rule 62-524.700, F.A.C. This prohibition shall apply to both the water well contractor and the well owner.

(b) It shall be a violation of Section 373.309, F.S., and this chapter to use for human consumption, after delineation, any water well subject to permit under this chapter without having performed water quality testing pursuant to Rule 62-524.600, F.A.C.

(c) It shall be a violation of Section 373.309, F.S., and this chapter to use for human consumption, after delineation, any water well subject to permit under this chapter in which contaminants have been found without a demonstration through water quality testing that a filter or other means of preventing the users of such a well from being exposed to ground water contamination is effective.

(2) Penalties.

(a) Any person who violates any provision of this chapter, order, or permit issued under the authority of this chapter shall, upon conviction, be guilty of a misdemeanor of the second degree, punishable as provided in Sections 775.082 and 775.083, F.S. Continuing violation after an order or conviction shall constitute a separate violation for each day the violation occurs.

(b) Any water well contractor who is in violation of paragraph (1)(a) shall, in addition to paragraph (2)(a), also be subject to the penalty provisions in Chapter 62-531, F.A.C., including the license suspension and revocation provisions contained therein.

Specific Authority 373.309, 403.061, 403.062 FS. Law Implemented 373.309, 373.323, 373.336 FS. History–New 5-16-89, Amended 3-25-90, Formerly 17-524.740.

Appendix I

2005 Water Well Survey

Water Well Survey
Saufley Construction and Demolition Debris
Disposal Facility
5660 Saufley Field Road
Pensacola, Escambia County, Florida
WACs I.D. #NWD/17/00003066

Prepared For:

Louisiana Investment Group, LLC
5660 Saufley Field Road
Pensacola, Florida 32526

Submitted To:

Florida Department of Environmental Protection
Pensacola, Florida

Escambia County Health Department
Pensacola, Florida

August 8, 2005

GALLET & ASSOCIATES
Project 05PNLOU0401E

Pete H. Dohms, PG
Vice President
Florida License #208

Mark R. Dent, PG
Project Geologist

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1.0 INTRODUCTION

A Consent Order (OGC Case No. 05-0681-17-SW) was executed for the Saufley Construction and Demolition (C&D) Debris Disposal Facility on May 10, 2005. The requirements of the Consent Order require a Site Assessment be conducted at the Saufley C&D Debris Disposal Facility. A Water Well Survey is one element of the Site Assessment that is required prior to the submittal of the Site Assessment report. The following report was prepared by Gallet & Associates of Pensacola, Florida and details the locations and usages of the water wells within the required distances as set forth in Florida Administrative Code (FAC) 62-780.600. The site location is shown on Figure 1 (Location Map).

2.0 SITE SETTING AND HISTORY

Sand excavation at the site began prior to 1960 and ended in 1981 (S. Cummings, personal communication). Disposal operations began in 1990 by a lessee under a general permit from FDEP. That permit was transferred to the current operator (Saufley Landfill, Inc.) in 1995, was updated in 1998, was renewed in 2001, and renewed again in 2002.

3.0 SITE GEOLOGY AND HYDROGEOLOGY

Details regarding the site geology and hydrogeology were previously submitted (Dohms, 1998; Gallet, 2000; Gallet, 2002). The site is underlain by unconsolidated sand sediments that are equivalent to the Sand and Gravel Aquifer of the western Florida Panhandle. The Sand & Gravel Aquifer is separated into three divisions, the Surficial zone, the Low Permeability zone, and the Main Producing zone. These sediments extend from land surface to depths of 320 to 330 feet, and are underlain by a regional confining layer (Wilkins, et al, 1985; Kwader & Schmidt, 1975).

Exploration at the site to date has included a total of ten borings, extending as much as 80 feet below land surface. The uppermost saturated Surficial aquifer sands encountered in the borings grade from brightly-colored silty sands near surface, through duller-colored clayey to silty sands, and ultimately into light-colored clean sands in the bottoms of most well borings. The top of the Low Permeability Zone (LPZ) is present at a depth of about 30 feet below the bottom of the excavation (or about +25 feet NGVD. This zone is mapped to be about 45 feet thick (Roaza, et al, 1993) and is comprised of a mixture of silts, clays, and silty to clayey sands. The top of the Main Producing zone (MPZ) is mapped to lie at about -20 feet NGVD and, at this site, is mapped to be about 200 feet thick (Roaza, et al, 1993). No borings at the site have been advanced into the Main Producing Zone, though several borings at the nearby Pioneer Sand site were extended into the MPZ and some wells there tested that horizon. Based on previous work at the Saufley site (Dohms, 1998), the hydraulic conductivity of the LPZ was estimated to be about 3×10^{-8} cm/sec with a calculated leakance of about 2×10^{-6} ft^{-1}.

As mentioned, the Main Producing zone is semi-confined at this location; it has a phreatic surface elevation of about +25 feet NGVD (Roaza, et al, 1993). This ranges from 23 feet to 27 feet lower than the phreatic surface of the Surficial zone water table aquifer.

Sands of the Surficial zone were exposed in the side-walls of the entire excavation in which the landfill is located; exposures are preserved in the northeast corner of the site. These horizons extend from the undisturbed surfaces of the property (elevation about 85 feet) to the bottom of the excavation (just below the 55 foot elevation). The bottom of the excavation is typically above the water table. Based on previous work (Dohms, 1998), the hydraulic conductivity of the Surficial zone beneath the site is estimated to fall in a range of 4 – 11 feet per day and the horizon is estimated to have a transmissivity of approximately 1700 gpd/foot. Ground water velocity in the Surficial zone was estimated to range from 0.09 feet per day to 0.20 feet per day.

Ground water elevations at the site have fluctuated through an approximate six to eight foot range over the last three years, with a major decrease from May 1998 through September 2002 occurring in response to a prolonged drought. The most recent measurements (March 2005) suggest that the drought has ended and that water levels have recovered from their period-of-record lows.

The ground water flow direction was fairly consistent in a southerly to southeasterly direction across the site in the 1998 – 2005 period. Repeated measurements have confirmed that wells MW-3 and MW-6 are in the up-gradient position and that wells MW-1, MW-2 and MW-4 are down gradient from the site. New well MW-7 has been consistently down gradient from the site. New well MW-8 was initially down gradient from the site, but most recent measurements place it in a cross-gradient position. The gradient (slope) of the water table has been measured to vary from about 0.002 to 0.007 feet per foot over the period of record at the site. The typical ground water flow direction is shown on Figure 2.

4.0 WATER WELL SURVEY

4.1 Database Information

The water well survey was initiated by requesting a database search from the Northwest Florida Water Management District (NWFWMD). The request encompassed all reported water wells located in Sections 26, 27, 28, 35, 36, 37, and 38 of Township 1 South and Range 31 West and Sections 1, 2, and 36 of Township 2 South and Range 31 West. The database information provided by the NWFWMD was then referenced checked with information from the USGS, Escambia County Property Appraiser Website, and other various mapping and information services. The reference check indicated the presence of multiple water wells in the vicinity of the facility. The data and information obtained from the NWFWMD and other references was then used to assist in the field survey of the area surrounding the Saufley C&D Disposal Facility.

4.2 Field Survey

The locations of the identified water wells in the vicinity of the Saufley C&D Disposal facility are shown on Figure 2. The descriptions of the well's locations and usages are provided on Table 1.

For the field survey, database information was used to assist in a door-to-door survey for the presence of water wells of usages set forth in FAC 62-780.600. The door-to-door survey was

conducted over multiple days in July 2005. The well survey attempted to locate all water wells present within approximately ¼ mile of the facility and public supply wells within ½ mile of the facility. The survey indicated that presence of seven water wells within ¼ mile of the site (Figure 2). Three of the wells located within ¼ mile of the Saufley C&D debris disposal facility were listed in the NWFWMD database as domestic supply wells. Based on information from the field survey, none of these wells are believed to be utilized currently for domestic supply, and have been converted for usage as irrigation wells or have been removed from service. The four remaining wells within ¼ mile of the facility were listed in the database and confirmed in the field as landscape irrigation wells. Table 1 has details.

The public supply wells located in the vicinity of the facility are located on Saufley Field Navy base. The nearest ECUA well is located at the intersection of Cerny Road and Muldoon Road. The ECUA well is approximately 6,300 feet southeast of the facility. According to database and field survey information there are four public supply wells located on the Saufley Field Navy base. Of the four wells, only one of the public supply wells is located within ½ mile of the Saufley C&D Disposal facility while the other three lie outside the ½ mile search radius (Figure 2). The first well within the search radius is identified on the Saufley Field Navy base as well No. 3 and is located in building 2405, approximately 2,500 feet west of the disposal facility; it is completed to a depth of 228 feet. According to available information, the No. 3 water well is utilized as a limited supply public well, and is available for fire suppression or emergency conditions, and has emergency generator power supply. According to documentation available on the Department of the Navy and Pensacola Navy Air Station websites, the Saufley Field Navy base purchases its potable water from ECUA.

5.0 CONCLUSIONS & RECOMMENDATIONS

The information collected from the water well survey of the properties located in the vicinity of the Saufley C&D Disposal facility indicates that multiple water wells are present. Of the wells located, only public supply well No. 3 on Saufley Field Nave base is identified within ½ mile of the facility as a possible potable water supply. The public supply well (PS-3 on Figure 2 and Table 1) is reserved for emergency usage for fire suppression and possible usage as emergency potable water supply for the Navy base. Based on the cross gradient location and distance of the public supply well from the Saufley C&D Disposal facility, plus the limited extent and opposite flow direction of the impacted groundwater at the Saufley C&D Disposal facility, it is unlikely that public supply well No. 3 will be affected by facility operations.

The database search and the field survey indicated multiple private water wells located within ¼ mile of the Saufley Field C&D Disposal facility. According to database and field survey information, all of the identified wells are believed to be utilized solely as irrigation wells. The irrigation wells within ¼ mile of the facility are located to the north, northeast, and east of the facility (Figure 2), which is generally upgradient to cross gradient of the Saufley C&D facility, based on historic ground water flow direction measurements.

The conclusion of the water wells survey indicates that multiple wells are present within the required search distances listed in FAC 62-780. However, none of the wells located in the vicinity of the Saufley Field C&D Disposal facility are located within or downgradient of the

areas of impacted groundwater or located with in area that would likely be affected by facility operations. At this time Gallet & Associates does not recommend further investigation into the presence of, or the sampling or monitoring of irrigation, domestic or public supply wells located within the vicinity of the Saufley Field C&D Disposal facility.

6.0 REFERENCES

Dohms, Peter H., 1998, Water Quality Monitoring Plan, Hydrogeological Investigation and Site Report, Saufley Landfill, Inc., Saufley Field Road C&D Landfill, Escambia County, Florida, private report for Saufley Landfill, Inc., 30 pages plus attachments.

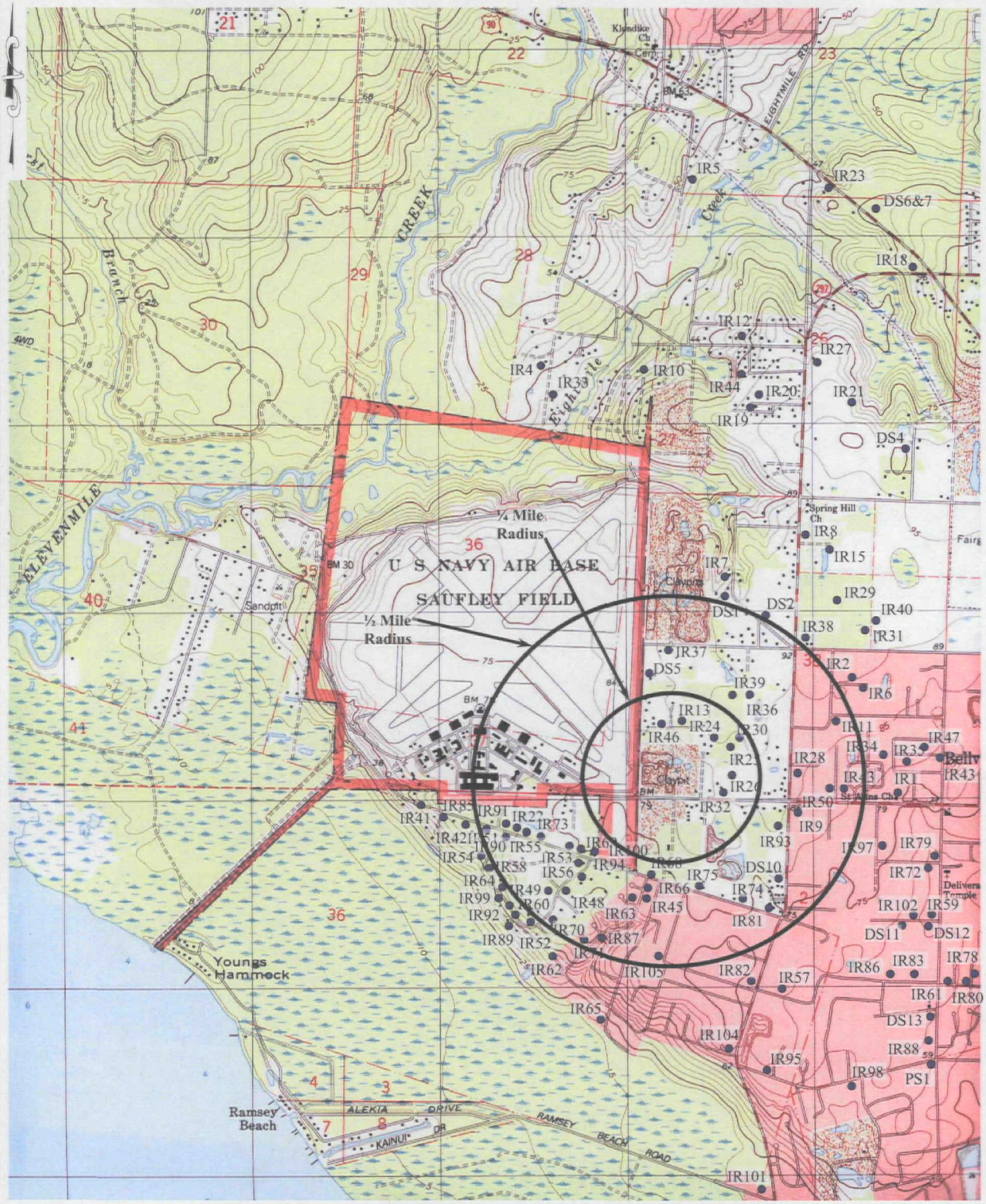
Gallet & Associates, 2002, Water Quality Monitoring Plan, Hydrogeological Investigation and Site Report, Saufley Landfill, Inc., Saufley C&D Landfill, Escambia County, Florida, private report for Saufley Landfill, Inc., 24 pages plus attachments.

Kwader, Thomas, and Walter Schmidt, 1975, Top of the Floridan Aquifer, Northwest Florida, Florida Department of Natural Resources Bureau of Geology, Map Series #86, Tallahassee, 1 oversize sheet.

Roaza, Honesto P., T.R. Pratt, and C.J. Richards, 1993, Numerical Modeling of Ground Water Flow and Contaminant Transport in the Sand-and-Gravel Aquifer, Escambia County, Florida, Northwest Florida Water Management District Water Resources Special Report 93-4, Havana, Florida; 97 pp. and 28 oversize plates.

Safko, Paul S., 2000, Modified Water Quality Monitoring Plan, Saufley C&D Landfill, Escambia County, Florida, private report for Saufley Landfill, Inc., 10 pages plus attachments.

Wilkins, K.T., J.R. Wagner and T.W. Allen, 1985, Hydrogeologic Data for the Sand-and-Gravel Aquifer in Southern Escambia County, Florida, Northwest Florida Water Management District Technical File Report 85-2, Havana, 153 pages.



Gallet & ASSOCIATES

SITE ASSESSMENT REPORT
SAUFLEY FIELD C&D LANDFILL
SAUFLEY FIELD ROAD
PENSACOLA, ESCAMBIA CO., FLORIDA
PROJECT NO. 05PNLOU0501E

FIGURE 1
WATER WELL LOCATION MAP
USGS QUADRANGLE
PENSACOLA WEST, FLORIDA
JULY 2005 WELL DATA
SECTION 38, TOWNSHIP 1 SOUTH, RANGE 38 WEST
Latitude 30°03'26.5" N, Longitude 85°34'13.5" W

APPROXIMATE SCALE: 1" = 1700'

TABLE 1
WATER WELL SURVEY DATA FOR SELECT WELLS
SAUFLEY FIELD C&D DISPOSAL FACILITY
SAUFLEY FIELD ROAD
PENSACOLA, ESCAMBIA COUNTY, FLORIDA
PROJECT NO. 05PNLOU0101E

Map ID Location	Owner Name	Address Location	Listed Well Type/NWFWMD/Field Survey Information	Well Depth	Date Well Installed	Approximate Distance from Saufley Field C&D Landfill Boundary	Comments
DS3	Genevieve Brown	5640 Saufley Field Road Pensacola, FL 32506	Domestic (Not in Use/Abandoned?) (Not shown on Fig. 1)	85	18-May-88	250 feet East-Southeast	Property owner indicates that the well is no longer in use at the property, and the current status of the well is unknown.
DS8/IR46		6132 E. Fence Road Pensacola, FL 32506	Domestic (Not In Use/Agricultural?)	48	8-Sep-88	450 feet North-northwest	Owner not home. Neighbor indicates that the residence is on ECUA supply for potable water. ECUA water supply line was run along his fenceline & access road. Status of the well is unknown.
DS9/IR13		6134 E. Fence Road Pensacola, FL 32526	Domestic (Not In Use/Agricultural?)	50	1-Sep-89	450 feet North-northeast	Owner not home. Neighbor indicates that the residence is on ECUA supply for potable water. ECUA water supply line was run along his fenceline & access road. Status of the well is unknown.
IR24	Gerald & Lorriane Smith	6132 Suntan Circle Pensacola, FL 32526	Landscape Irrigation	160	8-Feb-01	700 feet Northeast	Well used for landscape irrigation.
IR25	Llewellyn & Pamela Nonnenmecher	6067 Suntan Circle Pensacola, FL 32526	Landscape Irrigation	130	7-Sep-01	900 feet East-Northeast	Well used for landscape irrigation.
IR26	Donald & Anna Padgett	6031 Suntan Circle Pensacola, FL 32526	Landscape Irrigation	135	5-Nov-01	650 feet East	Well used for landscape irrigation.
IR30	Travis & Amy Foschini	6084 Suntan Circle Pensacola, FL 32526	Landscape Irrigation	165	19-Jul-02	1100 feet East-Northeast	Well used for landscape irrigation.
IR32	Frank & Janice Beard	6216 Suntan Circle Pensacola, FL 32526	Landscape Irrigation	120	1-Mar-03	400 feet East	Well used for landscape irrigation.
PS3	U.S. Navy	Saufley Drive Saufley Field Navy Base Pensacola, FL	Public Supply (Emergency Usage Only)	228	23-May-95	2,500 feet West	Well is operational, however, only used for emergency purposes (I.e. fire suppression). Potable water for the base is supplied by ECUA.

Notes:
1) Map ID Location indicates identification as shown on Gallet & Associates Figure 1 in the corresponding water well survey report.
2) Distances are approximate based on aerial photographs of the area from the Escambia County Property Appraiser's website and the USGS.
3) Field information on wells was obtained via a door to door survey in July 2005.

Appendix J

2007 Water Well Surveys

Florida Department of

Memorandum **Environmental Protection**

To: Michael S. Kennedy, P.G.

From: Julie Ann Lewis

Date: June 15, 2007

Subject: Saufley Field C&D Debris Disposal Facility Irrigation Well Survey; Pensacola, Escambia County Florida

March 20, 2007 an irrigation well survey was initiated for an area surrounding the Saufley Field C&D Landfill as requested. A preliminary well survey was conducted from the office using ArcMap and the Escambia County Property Appraiser Website to determine the types of properties located in the area of concern. It was determined that the majority of land is residential. The area of concern includes all properties west of Blue Angel Parkway, South of Saufley Field Road, and within an estimated quarter and half mile boundary surrounding the landfill. This area is shown on the map below.

Within the area of concern, there are approximately 234 properties. Of these properties, one potable drinking water well was located at 5851 N. Blue Angel Parkway, and is highlighted green in the list below. A total of 36 irrigation wells were located; two within a quarter mile; and are highlighted yellow in the list below. There are approximately 22 properties of which the presence of an irrigation well is unknown, most of the unknown properties are currently vacant or "For Sale".

The attached table lists the addresses of all properties within the half mile boundary, and whether or not an irrigation well is located on the property. A full list of the property owners and the phone numbers of the owners with irrigation wells can be found in the project folder located in my office. The attached map illustrates the positions of all irrigation and potable wells that have currently been located. Most of the irrigation well owners have given permission to have their wells sampled and tested if it becomes necessary.

JAL: jl

ADDRESS	CITY WATER	POTABLE WELL	YES IRR.	NO IRR.	UNKNOWN	COMMENT
5901 Saufley Pines Ct	X			X		
5905 Saufley Pines Ct	X				X	NOT COOPERATIVE
5909 Saufley Pines Ct	X			X		
5908 Saufley Pines Ct	X			X		
6200 Saufley Pines Rd	X			X		
6194 Saufley Pines Rd	X		X			180-220ft
6188 Saufley Pines Rd	X			X		
6182 Saufley Pines Rd	X			X		
6176 Saufley Pines Rd	X			X		
6170 Saufley Pines Rd	X		X			
6164 Saufley Pines Rd	X		X			Water From Pond Behind House
6201 Saufley Pines Rd	X			X		
6161 Saufley Pines Rd	X		X			125 FT
6151 Saufley Pines Rd	X				X	
6145 Saufley Pines Rd	X		X			
6139 Saufley Pines Rd	X		X			
6133 Saufley Pines Rd	X		X			
6127 Saufley Pines Rd	X			X		
6121 Saufley Pines Rd	X			X		
6115 Saufley Pines Rd	X			X		
6109 Saufley Pines Rd	X		X			
6103 Saufley Pines Rd	X		X			
6142 Saufley Pines Rd	X		X			
6100 Saufley Pines Rd	X				X	VACANT
6132 Saufley Pines Rd	X			X		
6128 Saufley Pines Rd	X			X		
6025 Saufley Pines Rd	X			X		
6019 Saufley Pines Rd	X			X		
6013 Saufley Pines Rd	X			X		
6007 Saufley Pines Rd	X			X		
6001 Saufley Pines Rd	X			X		
5940 Saufley Pines Rd	X				X	
5945 Saufley Pines Rd	X			X		
5935 Saufley Pines Rd	X			X		
5925 Saufley Pines Rd	X				X	LOOKS VACANT
5895 Saufley Pines Rd	X			X		
5891 Saufley Pines Rd	X		X			
5885 Saufley Pines Rd	X			X		
5868 Saufley Pines Rd	X			X		
5855 Saufley Pines Rd	X			X		
5845 Saufley Pines Rd	X			X		
5835 Saufley Pines Rd	X		X			
5837 Saufley Pines Rd	X			X		
5815 Saufley Pines Rd	X		X			
5888 Saufley Pines Rd	X		X			
5880 Saufley Pines Rd	X			X		SHARES WITH 5888
5870 Saufley Pines Rd	X			X		
5860 Saufley Pines Rd	X			X		

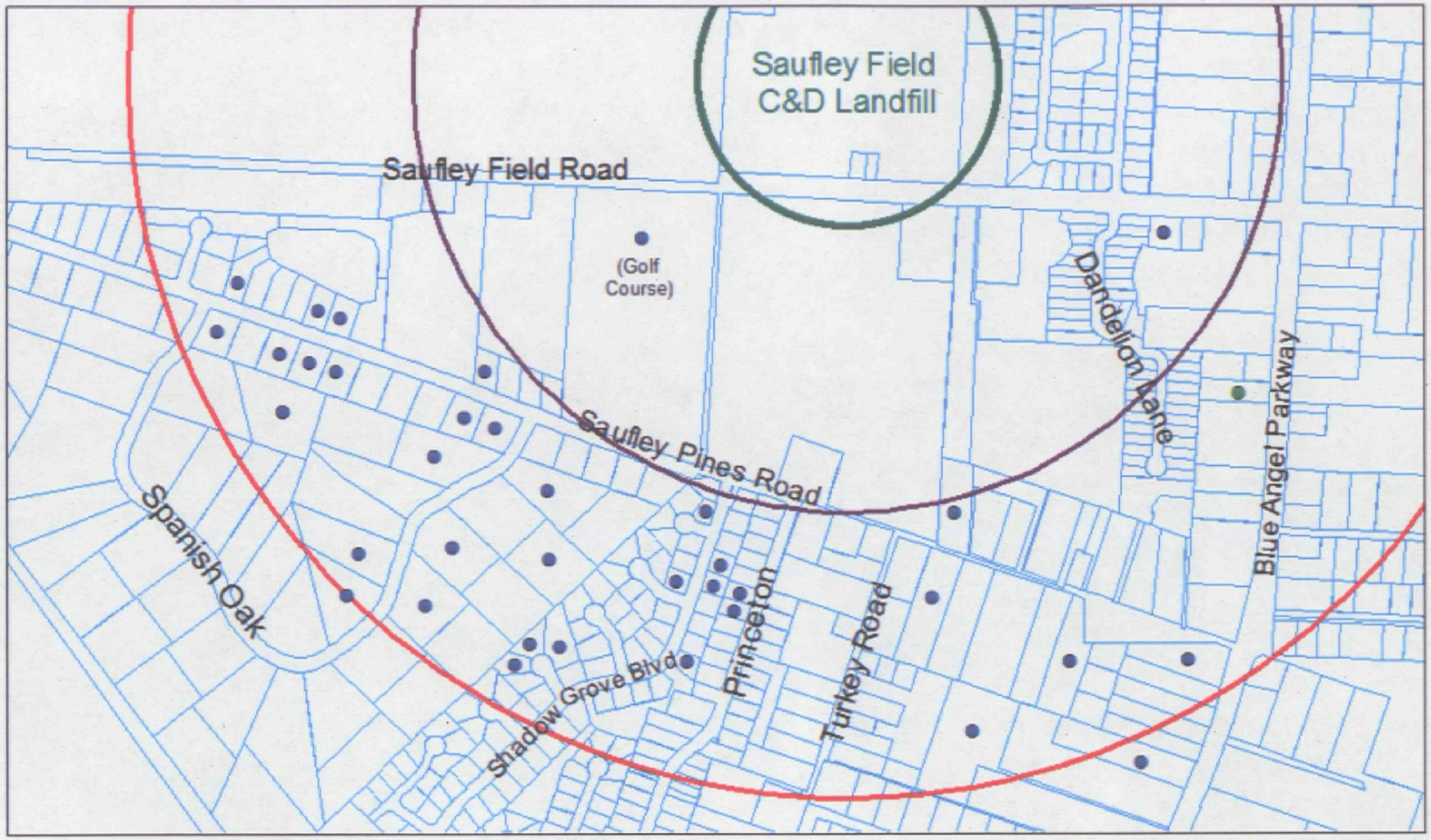
5850 Saufley Pines Rd	X			X		
5840 Saufley Pines Rd	X			X		
5830 Saufley Pines Rd	X			X		
5820 Saufley Pines Rd	X			X		
5835 Saufley Field Rd	X			X		
5665 Saufley Field Rd	X			X		
5575 Saufley Field Rd	X		X			NOT IN USE
5565 Saufley Field Rd	X			X		
5545 Saufley Field Rd	X			X		
5501 Saufley Field Rd	X			X		
6409 Saufley Field Road	X		X			
5989 N Blue Angel Pkwy	X			X		
5987 N Blue Angel Pkwy	X			X		
5851 N Blue Angel Pkwy		X		X		POTABLE WELL
5821 N Blue Angel Pkwy	X			X		
5801 N Blue Angel Pkwy	X				X	
5601 N Blue Angel Pkwy	X			X		MOBILE HOMES
5509 N Blue Angel Pkwy	X			X		
5479 N Blue Angel Pkwy	X			X		
5457 N Blue Angel Pkwy	X			X		
5435 N Blue Angel Pkwy	X			X		
5403 N Blue Angel Pkwy	X		X			
5339 N Blue Angel Pkwy	X		X			
5757 Turkey Road	X			X		
5739 Turkey Road	X			X		NOT IN USE
5735 Turkey Road	X			X		
5731 Turkey Road	X			X	X	
5725 Turkey Road	X			X		VACANT
5717 Turkey Road	X			X		
5709 Turkey Road	X			X		
5701 Turkey Road	X			X		
5691 Turkey Road	X				X	
5718 Turkey Road	X			X		MOBILE HOMES
5740 Turkey Road	X			X		
5744 Turkey Road	X			X		
5746 Turkey Road	X				X	
5722 Turkey Road	X			X		
5748 Turkey Road	X			X		
5750 Turkey Road	X			X		
5752 Turkey Road	X			X		
5762 Turkey Road	X				X	VACANT-FOR SALE
5760 Turkey Road	X			X		
5826 Perkins St	X			X		
6029 Spanish Oaks	X			X		
6027 Spanish Oaks	X		X			
6033 Spanish Oaks	X		X			
6031 Spanish Oaks	X			X		
6037 Spanish Oaks	X			X		
6035 Spanish Oaks	X		X			
6041 Spanish Oaks	X			X		

6039 Spanish Oaks	X		X			
6040 Spanish Oaks	X		X			
6038 Spanish Oaks	X		X			
6036 Spanish Oaks	X			X		
6034 Spanish Oaks	X			X		
6028 Spanish Oaks	X		X			
6030 Spanish Oaks	X			X		
6084 Spanish Oaks	X		X			
6080 Spanish Oaks	X			X		
5901 Dandelion Lane	X			X		
5897 Dandelion Lane	X			X		
5893 Dandelion Lane	X			X		
5889 Dandelion Lane	X			X		
5885 Dandelion Lane	X			X		
5881 Dandelion Lane	X			X		
5877 Dandelion Lane	X			X		
5873 Dandelion Lane	X			X		
5869 Dandelion Lane	X			X		
5865 Dandelion Lane	X			X		
5861 Dandelion Lane	X			X		
5857 Dandelion Lane	X			X		
5835 Dandelion Lane	X			X		
5831 Dandelion Lane	X			X		
5827 Dandelion Lane	X			X		
5823 Dandelion Lane	X			X		
5819 Dandelion Lane	X			X		
5815 Dandelion Lane	X			X		
5811 Dandelion Lane	X			X		
5807 Dandelion Lane	X			X		
5803 Dandelion Lane	X			X		
5799 Dandelion Lane	X			X		
5795 Dandelion Lane	X			X		
5796 Dandelion Lane	X			X		
5800 Dandelion Lane	X			X		
5804 Dandelion Lane	X			X		
5808 Dandelion Lane	X			X		
5812 Dandelion Lane	X			X		
5816 Dandelion Lane	X			X		
5820 Dandelion Lane	X			X		VACANT-FOR SALE
5824 Dandelion Lane	X			X		
5828 Dandelion Lane	X			X		
5832 Dandelion Lane	X			X		
5836 Dandelion Lane	X			X		
5840 Dandelion Lane	X			X		
5852 Dandelion Lane	X			X		
5856 Dandelion Lane	X			X		
5860 Dandelion Lane	X			X		
5872 Dandelion Lane	X			X		
5876 Dandelion Lane	X			X	X	VACANT
5880 Dandelion Lane	X			X		

5884 Dandelion Lane	X			X		
5888 Dandelion Lane	X			X		
5892 Dandelion Lane	X			X		
5896 Dandelion Lane	X			X		
5900 Dandelion Lane	X			X		
5961 Princeton Dr	X			X		
5955 Princeton Dr	X				X	
5949 Princeton Dr	X			X		
5943 Princeton Dr	X				X	
5937 Princeton Dr	X			X		
5931 Princeton Dr	X		X		X	
5925 Princeton Dr	X		X			
5919 Princeton Dr	X			X		
5913 Princeton Dr	X			X		
5907 Princeton Dr	X			X		
5851 Princeton Dr	X			X		
5845 Princeton Dr	X			X		
5839 Princeton Dr	X			X		
5833 Princeton Dr	X			X		
5836 Princeton Dr	X			X		
5842 Princeton Dr	X				X	
5850 Princeton Dr	X			X		
5856 Princeton Dr	X			X		
5860 Princeton Dr	X				X	
5864 Princeton Dr	X			X		
5900 Princeton Dr	X			X		
5906 Princeton Dr	X			X		
5908 Princeton Dr	X			X		
5910 Princeton Dr	X			X		
5914 Princeton Dr	X			X		
5918 Princeton Dr	X			X		
5945 Princeton Dr	X			X		
5906 Kenwood Dr	X			X		
5907 Kenwood Dr	X			X		
5501 Shadow Grove Blvd	X			X		
5505 Shadow Grove Blvd	X			X		
5509 Shadow Grove Blvd	X			X		
5513 Shadow Grove Blvd	X		X			
5517 Shadow Grove Blvd	X		X			
5521 Shadow Grove Blvd	X			X		
5525 Shadow Grove Blvd	X			X		
5529 Shadow Grove Blvd	X			X		
5533 Shadow Grove Blvd	X		X			
5537 Shadow Grove Blvd	X			X		
5541 Shadow Grove Blvd	X			X		
5545 Shadow Grove Blvd	X			X		
5549 Shadow Grove Blvd	X			X		
5553 Shadow Grove Blvd	X			X		
5557 Shadow Grove Blvd	X				X	VACANT
5554 Shadow Grove Blvd	X			X		

5550 Shadow Grove Blvd	X				X	
5532 Shadow Grove Blvd	X			X		
5528 Shadow Grove Blvd	X			X		
5524 Shadow Grove Blvd	X				X	VACANT
5520 Shadow Grove Blvd	X			X		
5516 Shadow Grove Blvd	X		X			
5512 Shadow Grove Blvd	X			X		
5508 Shadow Grove Blvd	X			X		
5504 Shadow Grove Blvd	X		X			
5500 Shadow Grove Blvd	X			X		
1708 Morning Mist Cir	X			X		
1704 Morning Mist Cir	X			X		
1705 Shadetree Circle	X			X		
1709 Shadetree Circle	X		X			
1712 Shadetree Circle	X		X			
1704 Shadetree Circle	X		X			
1700 Shadetree Circle	X			X		
1701 Gnarly Oaks Cir	X				X	
1705 Gnarly Oaks Cir	X			X		
1709 Gnarly Oaks Cir	X			X		
1713 Gnarly Oaks Cir	X			X		
1712 Gnarly Oaks Cir	X			X		
1708 Gnarly Oaks Cir	X			X		
1704 Gnarly Oaks Cir	X			X		
1705 Cahaba Circle	X			X		
1709 Cahaba Circle	X			X		
1713 Cahaba Circle	X			X		
1712 Cahaba Circle	X				X	VACANT-FOR SALE
1708 Cahaba Circle	X			X		
1704 Cahaba Circle	X			X		
1705 Moonglow Circle	X			X		VACANT-FOR SALE
1706 Moonglow Circle	X			X		
1704 Moonglow Circle	X			X		
476 Elcino Dr	X			X		
477 Elcino Dr	X				X	VACANT-FOR SALE

Saufley Field C&D Landfill Irrigation Well Survey



0 0.125 0.25 Miles

Julie Ann Lewis 4/5/07

N

LEGEND

- Irrigation Well
- Potable Well
- 0.25 Mile Buffer
- 0.5 Mile Buffer
- 2005 Property Appraiser Parcels

Florida Department of

Memorandum **Environmental Protection**

To: Dominique Harding DH

From: Julie Ann Lewis JAL

Date: September 13, 2007

Subject: Saufley Field C&D Debris Disposal Facility Irrigation Well Survey; Pensacola, Escambia County Florida

March 20, 2007 an irrigation well survey was initiated for an area surrounding the Saufley Field C&D Landfill as requested. Saufley Field Construction and Demolition Debris Disposal Facility is located at 5660 Saufley Field Road in Escambia County. A preliminary well survey was conducted from the office using ArcMap and the Escambia County Property Appraiser Website to determine the types of properties located in the area of concern. It was determined that the majority of land is residential. The area of concern includes all properties west of Blue Angel Parkway, South of Saufley Field Road, and within an estimated quarter mile boundary surrounding the landfill. This area is shown on the map below.

Within the area of concern, there are approximately 234 properties. Of these properties, one potable drinking water well was located and 34 irrigation wells were located. As of July 16, 2007 when the survey ended, there were approximately 20 properties of which the presence of an irrigation well was unknown. The majority of these properties were either vacant, or the property owner was unwilling to cooperate with the survey.

The Escambia County Health Department was informed of the potable well located at 5851 N Blue Angel Parkway and sampled it as part of the SUPERACT Program. The well was designated AAD4913 and sampled July 9, 2007 for arsenic, lead, sulfate, total dissolved solids (TDS), and volatile organic chemicals (VOC's). Information on the well is shown below in table C. The VOC's arrived to the DOH Jacksonville laboratory above the required temperature and therefore had to be resampled. VOC's were resampled July 25, 2007. Results were received by the Escambia County Health Department and a copy was forwarded to me as requested. All results were below respective groundwater cleanup target levels and are shown in a table D below.

On July 16 and 17, 2007 a total of seven irrigation wells and one irrigation pond were sampled for contaminants of concern which include arsenic, chromium, sulfate, iron, and manganese. Information on the seven wells and irrigation pond sampled is shown below in table A. Results were received by the Department on August 8 and September

6, 2007. All results were below respective Primary Standards. Four irrigation wells displayed results above the Secondary Standard for iron, and three wells displayed results above the Secondary Standard for manganese. Results are shown in table B below; all results above the respective cleanup target levels are in **Bold**.

At this time, no additional sampling will be performed since all results are below respective Primary Standards. A full list of the properties included in the area of concern can be found in the project folder located in my office. The attached map illustrates the positions of all irrigation and potable wells that have currently been located; the sampled wells are designated with pink dots.

JAL: jl

TABLE A

FLUWID	ADDRESS	NAME	COMMENT
AAK1801	6164 SAUFLEY PINES RD	KELLY	IRRIGATION WELL
AAK1801(B)	6164 SAUFLEY PINES RD	KELLY	POND BEHING HOUSE, USED FOR IRRIGATION (MULTIPLE HOUSES)
AAK1800	5891 SAUFLEY PINES RD	BEASLEY	IRRIGATION WELL
AAK1999	5888 SAUFLEY PINES RD	COTTON	IRRIGATION WELL
AAK1998	6490 SAUFLEY PINES RD	US GOVT.	US GOVTERNMENT GOLF COURSE, MULTIPLE IRRIGATION WELLS
AAK1997	5513 SHADOW GROVE BLVD	HEISER	IRRIGATION WELL
AAK1996	5504 SHADOW GROVE BLVD	HASSELL	IRRIGATION WELL
AAK1995	5925 PRINCETON DR	LAWRENCE	IRRIGATION WELL

TABLE B

FLUWID	WELL DEPTH	DATE SAMPLED	AS .01 mg/L	CR 0.1 mg/L	FE 0.3 mg/L	MN 0.05mg/L	SO4 250 mg/L
AAK1801	160 FT	7/16/2007	0.0000797	0.0031	0.032	0.0054	1.7
AAK1801(B)	SURFACE	7/16/2007	0.00244	0.00054	**1.5**	**0.27**	8.1
AAK1800	UNKNOWN	7/16/2007	0.00149	0.0088	**15**	**1.1**	6.4
AAK1999	100 FT	7/16/2007	0.000165	0.003	0.16	0.004	1.8
AAK1998	150 FT	7/17/2007	0.000105	0.00031	**0.77**	0.05	0.96
AAK1997	160 FT	7/17/2007	0.000068	0.0024	0.0015	0.00094	1.5
AAK1996	UNKNOWN	7/17/2007	0.00024	0.00098	0.018	0.00087	1.4
AAK1995	73 FT	7/17/2007	0.0000701	0.0022	**1.4**	**0.059**	8.6

TABLE C

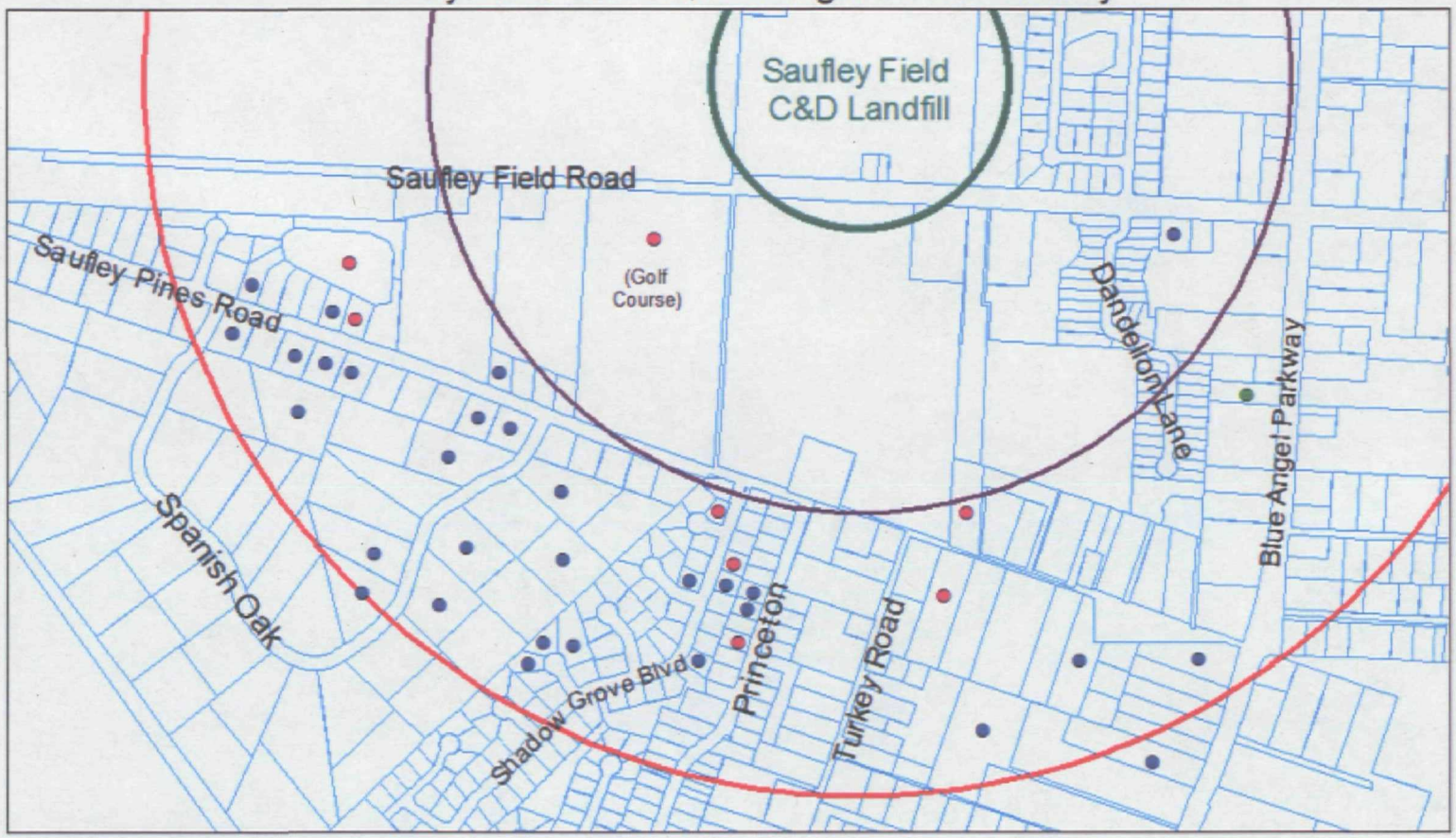
FLUWID	NAME	ADDRESS	COMMENT
AAD4913	HAYES	5851 N BLUE ANGEL PKWY	POTABLE WELL SAMPLED BY ESC. CO. HEALTH DEPARTMENT

TABLE D

FLUWID	DATE SAMPLED	WELL DEPTH	VOC	AS .01 mg/L	PB .015 mg/L	SO4 250 mg/L	TDS 500 mg/L
AAD4913	7/10/07 & 7/25/07 (VOC)	60 FT ?	ND	0.000068	0.0018	1.2	23

*ND – None Detected

Saufley Field C&D Landfill Irrigation Well Survey



DEPARTMENT OF ENVIRONMENTAL PROTECTION
FLORIDA

0 0.125 0.25 Miles

N

Julie Ann Lewis 9/13/07

LEGEND

- Sampled Irrigation Wells
- Irrigation Well
- Potable Well
- 0.25 Mile Buffer
- 0.5 Mile Buffer
- 2005 Property Appraiser Parcels